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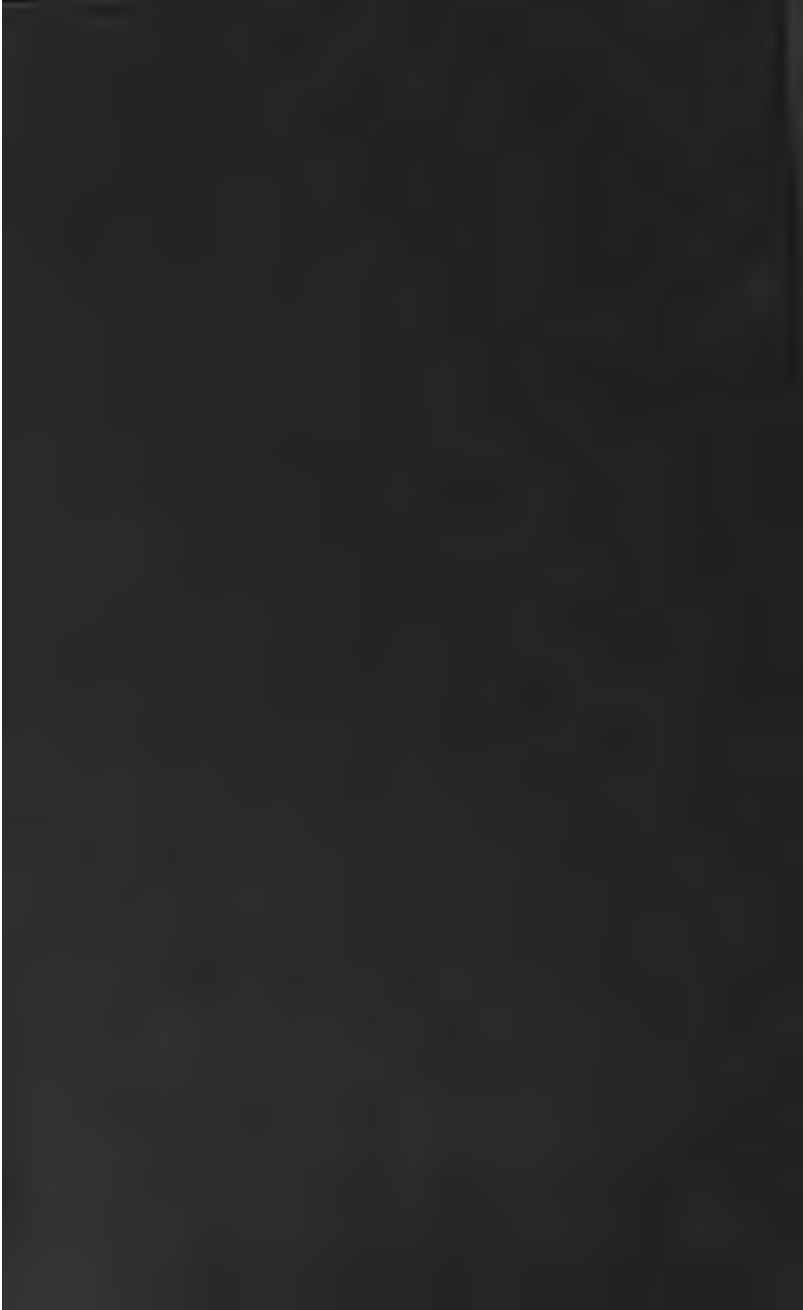
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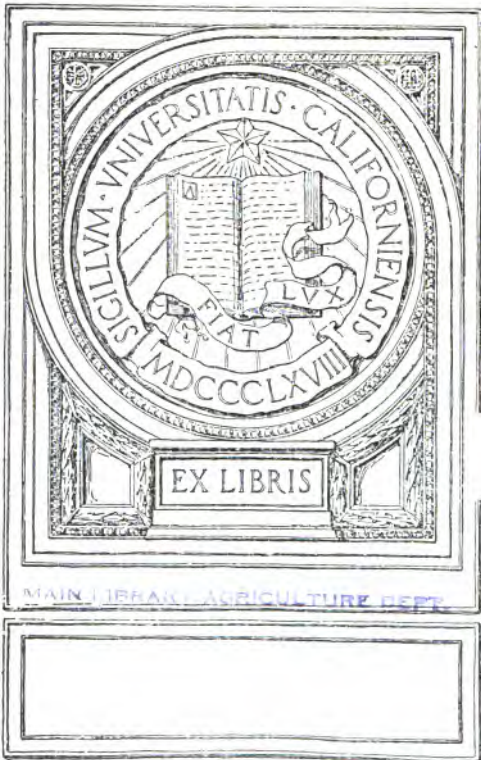
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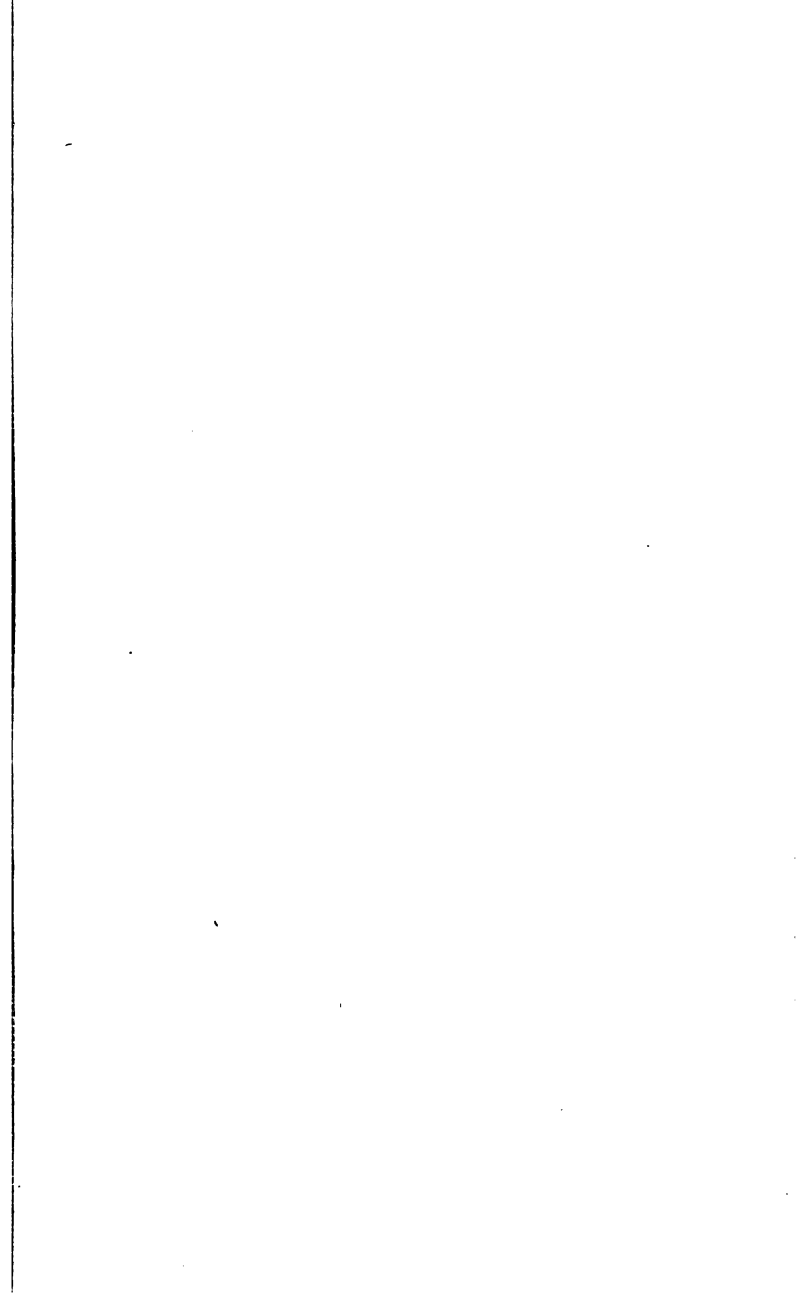


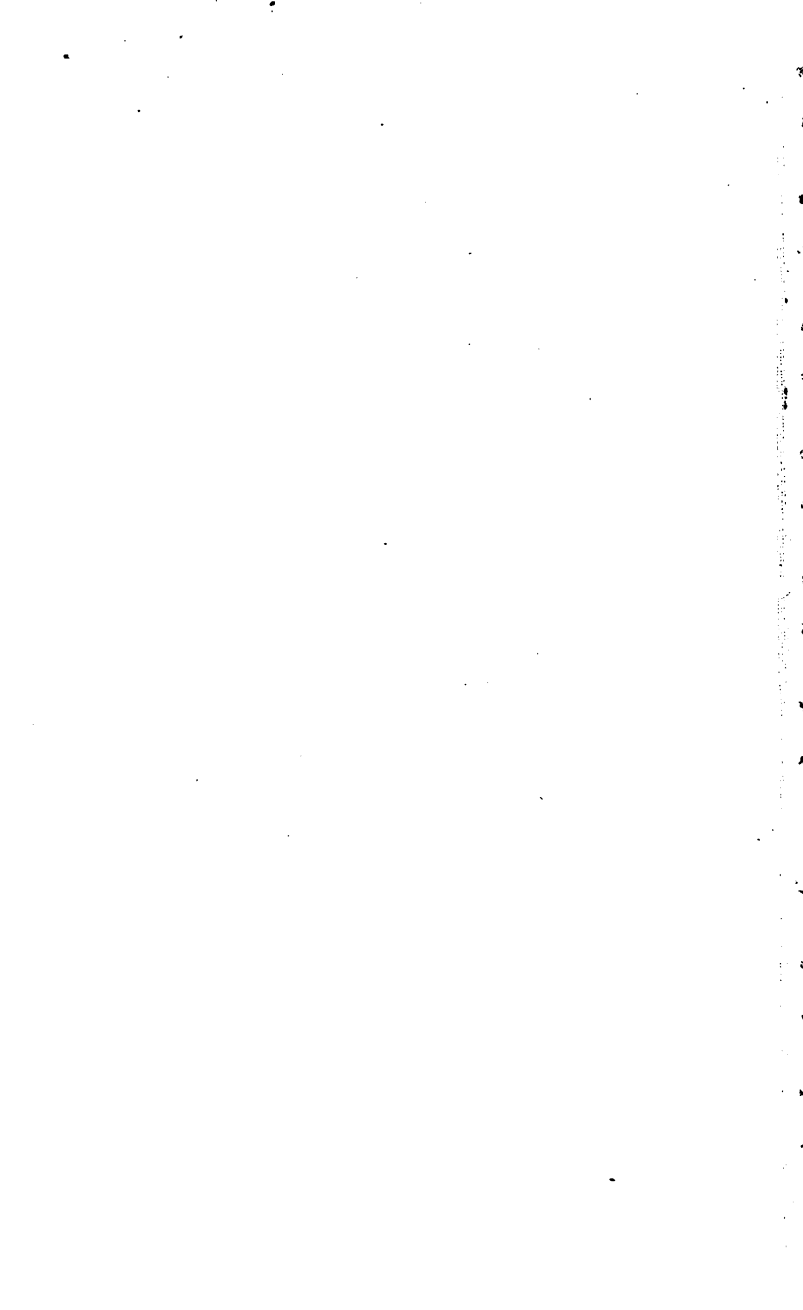


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T. W. Major

The

Study of Breeds

In America

Cattle, Sheep and Swine



By THOMAS SHAW

Professor of Animal Husbandry at the University of Minnesota



Author of

"Public School Agriculture"

"Weeds and How to Eradicate Them"

"Forage Crops Other Than Grasses"

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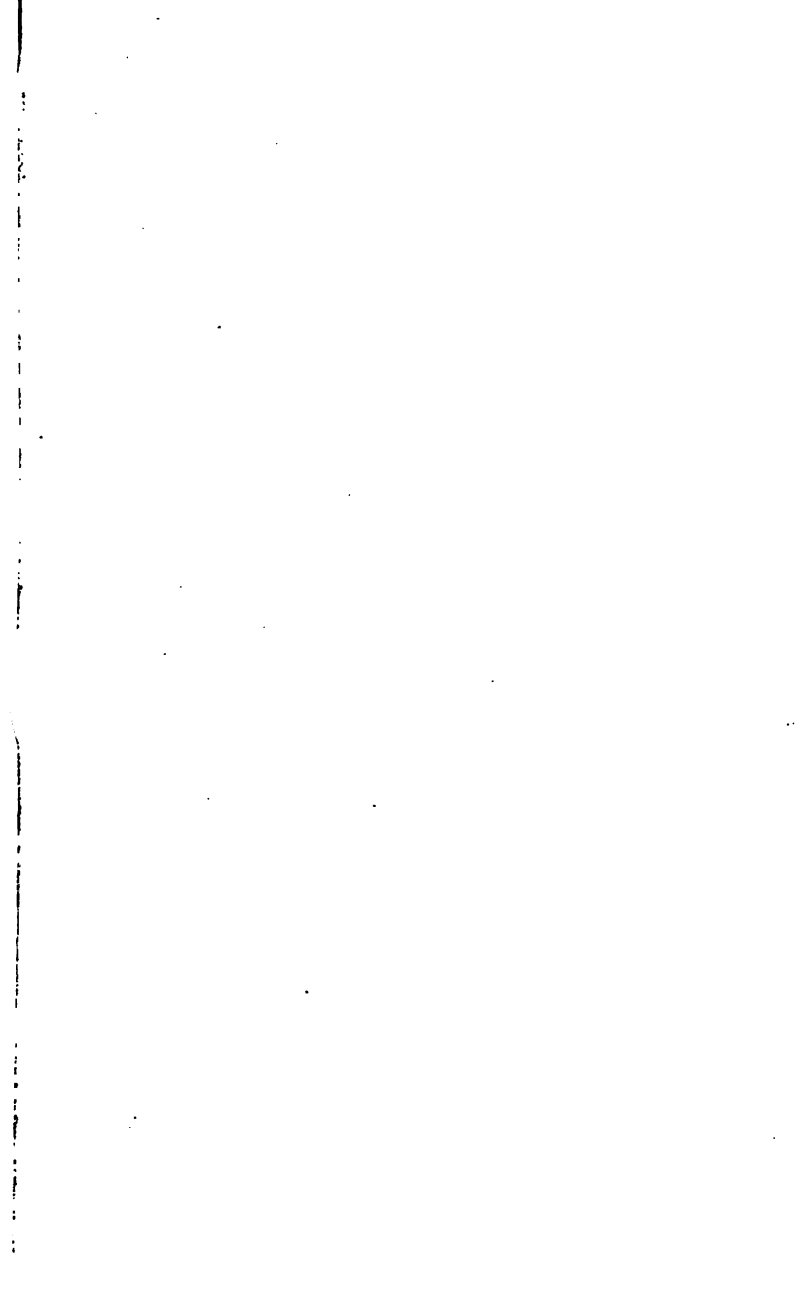
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In the Shade of the Elms. (See Appendix B)

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The author desires to acknowledge his indebtedness to the secretaries of the various Live Stock Associations for information furnished, to the owners of sketches previously made and of animals sketched to provide the illustrations used, and to Mr. Charles P. Taylor of the University of Minnesota for valuable assistance in preparing many of the sketches and otherwise assisting in the preparation of the book.

*To the students of the agricultural colleges and the growers
of live stock in America, this work is most respectfully dedi-
cated by The Author.*

University of Minnesota, 1900.

THE AUTHOR'S PREFACE

In this book it has been the aim of the author to discuss, in a manner at once brief and concise, all the pedigreed breeds of cattle, sheep and swine at present existing in America, and also the more important of the sub-breeds. It has been written in the hope that the student of the college and the farm will not be necessitated to travel the same toilsome road trodden by the author when gathering the information which it contains.

When the author was called to the chair of Animal Husbandry, no way marks relating to this study had been set up for the guidance of either teacher or student. No work had ever been written on the study of breeds as such. The historical truths relating to the subject existed, but they were strewn about as though with the winds of centuries. No one had dealt in a systematic way with the characteristics of the breeds. No one had presumed to formulate standards of excellence where they did not exist, nor had the standards in existence for the pure breeds been all collected and published in one volume. The leading truths relating to this great study had of course been discovered, but no one had undertaken the work of collecting and systematizing them so that they would be of easy access to the student or the farmer. To thus gather and systematize these truths has been the aim of the author.

It is expected that exception will be taken to some of the statements made, more especially with

reference to animal form, to type within the breeds and to the comparisons drawn with reference to breed characteristics. It could not be otherwise when men differ so widely in regard to these questions, and more especially where those differences of view rest upon a basis of self-interest, as they frequently do. The foremost dairymen are not yet agreed as to the exact furnishings of the highest type of a dairy cow, nor can two judges of beef cattle be found who are likely to work for one hour together in the show-ring without differing in their opinions. It is expected, therefore, that criticisms will be made in the spirit of candor and fairness in which the author has tried to discuss the whole question.

It is also believed that some of the comparisons drawn will not hold good some years hence, owing to the modifications in form and adaptation that will be made with some of the breeds. It is not necessary, however, to attempt to forecast these changes. Posterity may be safely trusted to deal with them when they arise.

Students of the agricultural colleges and of the farms, and breeders of America, this is your book. May it prove to you the stepping stone to higher things in this great industry.

*University Experiment Farm,
St. Anthony Park, Minn., 1900.*

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PART I

BREEDS OF CATTLE

LECTURE NO. I.

ORIGIN OF THE DOMESTICATED RACES OF CATTLE.

I. Reliable information regarding the different races of cattle is very meager until we reach the seventeenth century, owing

(1) To the very partial references made to them by historians before that time, and

(2) To the imperfect nature of the sketches made by artists, so far as these have been handed down to us.

II. It is noteworthy that the first shepherd and the first farmer were cotemporaneous.

(1) Likewise the keeping of live stock and grain growing have gone hand in hand through all the centuries wherever agriculture has been distinctively progressive.

(2) The exceptions are mountainous and infertile districts, and those with a great abundance of fertility.

(3) The comparatively unimproved condition of the live stock interest is to-day the weakest point in American agriculture.

III. The term cattle is applied to the various races of domesticated animals belonging to the genus *Bos*—the ox.

(1) It belongs to the class *Mammalia*, the order *Ruminantia*, and the family *Bovidae* and comprises two primary groups, viz: The *Bos indicus* and *Bos taurus*.

(2) The sub-genus, *Bos indicus*, includes the zebu or humped cattle numerous found in some parts of Asia and Africa.

(3) The other sub-genus, *Bos taurus*, includes all cattle in which the hump is absent, whether domesticated or otherwise.

IV. From the testimony of the rocks, we know that the ox existed in northern Europe prior to the glacial period.

(1) Whether the species then existing were the ancestors of the breeds of the present time can never certainly be known, but

(2) It is more probable that the present types are the descendants of cattle brought by the various migrations of the human family as they journeyed westward.

V. Cattle did not exist in America prior to its discovery by Europeans.

(1) The bovine races in America are all descended from the cattle of Europe.

(2) With but few exceptions they have been furnished by Great Britain, the Netherlands, Switzerland and Spain.

VI. It is generally supposed that the domesticated cattle of Europe, including those of Great Britain, have been derived from at least two distinct species, namely the *Bos primigenius* or *Bos urus*, and the *Bos longifrons*.

(1) The *Bos urus* were of extraordinary size, strength and swiftness, and were withal very fierce.

(2) The *Bos longifrons* were small in size, short in body and had fine, deer-like limbs.

(3) Other fossil specimens, formerly classified as *Bos frontosus* and *Bos trochocerus*, have more recently been identified as belonging to one or the other of the aforementioned species.

VII. There is much difference of opinion as to whether the domesticated cattle of Europe and America are descended from the *Bos urus*, or the *Bos longifrons*, or from a blending of the two species.

(1) Some regard them as the degenerate offspring of the former.

(2) Others regard them as the improved offspring of the latter, and

see front of the book

(3) Yet others regard them as the result from crossing these.

(4) The second theory is more likely to be correct, since improved environment is followed by improved development.

VIII. Nearly all the improved breeds of cattle found in Anglo-Saxon speaking countries have been derived from Great Britain, because

(1) Of the great variety and superior excellence of the breeds found there, and

(2) Of the natural genius of her people for stock keeping—a characteristic which the colonists have carried along with them.

IX. In many of the older countries of the Eastern world the cattle are probably descended from an ancestry going far back beyond the Christian era.

(1) They have not improved because agriculture has not materially improved, and

(2) This is more particularly true of pastoral countries.

X. Nature unaided can in suitable localities maintain a certain standard of excellence through the laws that govern natural selection, but she cannot improve upon these, hence

(1) Domestication is necessary to effect improvement, but

(2) It does not follow, of necessity, that domestication always improves upon nature.

LECTURE NO. 2.

ORIGIN OF THE BRITISH BREEDS OF CATTLE.

I. The precise origin of the British breeds of cattle will probably never be fully known.

(1) Fossiliferous remains prove that at least some of the present types of cattle have been long in the land.

(2) Some are of the opinion that they came originally from the continent, when the bed of the English Channel was dry.

(3) Some regard them as the conglomerate produce of two or more distinctly different species of the genus *Bos*.

(4) Others regard them as the differentiated offshoots of one great parent stem.

II. It is not impossible, nor can it be said to be improbable, that the many and varied breeds of cattle now found in Great Britain came from the one parent stem, the aboriginal cattle of the country.

(1) Great variations would be induced by locality, and conditions belonging to the same.

(2) These variations would relate to such properties as production, size, color, form, flesh, milk and maturity.

(3) They would be increased by fusion with other races of cattle brought into the country through the successive invasions of the Saxons, the Danes and the Normans.

(4) They would be further intensified by some public and private importations from the continent, in the later centuries.

III. The principal agencies in producing evolution or variation of race and type in cattle are inter-breeding or crossing, climate, food, habit and treatment.

(1) Inter-breeding or crossing is one of the most potent agents in producing variation, especially as to form.

(2) Climate affects color, the nature of the coat, development and maturity.

(3) Food affects development both of the frame and flesh, and also the milking qualities.

(4) Habit affects constitution and transmission.

(5) Treatment affects constitution and performance, and qualifies all the influences indicated above.

IV. The great improvement in the many breeds of cattle found in Great Britain has been brought about through the molding influences of man, operating in the line of natural laws.

(1) These influences are: Careful selection in breeding, judicious mating, inter-crossing of the progeny for a time, liberal sustenance and wise management generally.

(2) They have been aided by a favorable and varied soil and climate and by the fusion of different breeds and types, each possessing intensified peculiarities.

(3) The tastes of the British people, arising in part out of their necessities, have conduced to the same end.

V. The aboriginal cattle of Great Britain are probably represented in the Kyloes of Scotland and the Black cattle of Wales, with little or no admixture of other blood, and in purest form in the wild white cattle still found in certain parks.

(1) The differences which characterize these arise from some of the influences named as concerned in variation, more especially climate and food.

(2) All or nearly all of the other races have probably been influenced to a greater or less extent by the fusion of the blood of other breeds.

VI. The chief of the herds of wild white cattle still existing in Great Britain are found in Chillingham park, Lyme park, Chartley and Chadzow forest.

(1) The prevailing color is white with a few of the bulls cream, but the whole of the ear inside and one-third outside from tip down is red or brown.

(2) The horns are rather fine and white, with black tips.

(3) The color of the muzzle is black.

(4) The bulls have coarse hair on the neck from one and one-half to two inches long.

(5) They mature at six years, when the males weigh, dressed, about "550 pounds."

VII. The many breeds of cattle in Great Britain have been classified as Long-horned, Middle-horned, Short-horned and Polled.

(1) The Long-horned varieties represented in the Long-horns, prominent in the closing half of the last century, are probably waning in popularity.

(2) The Middle-horned breeds include the Herefords, the Sussex, the Devons, the West Highland and the Ayrshires.

(3) The Short-horned breeds include the Durham, more frequently called Shorthorn, the Jersey, the Guernsey and the Kerry.

(4) The Polled, or hornless breeds, which are an artificial variety, include the Aberdeen-Angus Polls, the Galloways and the Red Polls.

VIII. All the breeds named under Note VII are more or less represented in the United States and Canada, and in addition the following:

(1) The Holsteins and Dutch Belted breeds from the Netherlands, the Brown Swiss from Switzerland, the Canadian cow of French origin and the Texans of Spanish ancestry.

(2) The Texans, numerous on southern ranges, are small in size and long of horn, and they are kept pure as are the other breeds, but are not registered.

LECTURE NO. 3.

CLASSIFICATION OF CATTLE.

I. The formal classification of cattle on the basis of utility does not appear to have been attempted by those who have written on bovine husbandry, owing probably

(1) To the difficulties attending such classification, arising from

(2) Variations in performance growing out of variations in environment and treatment, and from the different ends for which cattle of the same breed are kept, hence

(3) No classification can be adopted at the present time that is likely wholly to escape criticism.

II. The classification of cattle, and indeed of all domestic animals, cannot longer be deferred, owing

(1) To the necessity for such classification.

(a) In the systematic teaching of live stock husbandry in our public institutions, and

(b) In preventing unfair competition in public showings.

(2) The general adoption of suitably prepared standards of excellence will more and more simplify the work of classification, but

(3) No classification can be submitted that may not require modification sometime in the future.

III. Cattle in the United States and Canada may be classified as pure bred, common and "scrub" or unimproved.

(1) Pure breeds are those which have been bred without admixture of alien blood and whose lineage is kept in suitable public records.

(a) They possess marked adaptation to certain conditions of environment, and

(b) The males are capable of effecting a marked improvement in the offspring of common and unimproved cattle when crossed upon these.

(2) Common cattle are those of mixed breeding, and of what may be termed average development.

(a) Their blood elements may and do vary exceedingly, but they are usually possessed of some pure blood.

(b) For various reasons their numbers are likely to continue to predominate.

(3) Scrub cattle are those of inferior individuality.

(a) They have not been improved by up-grading or crossing, and

(b) They are usually inferior in form and low in performance.

IV. The pure breeds of cattle in the United States and Canada may be classified as beef, dairy and dual-purpose.

(1) Beef cattle are those which are chiefly valuable for producing beef.

(2) Dairy cattle are those which are chiefly valuable for producing milk.

(3) Dual-purpose cattle are those which are capable in a fair degree of producing both meat and milk.

V. Adaptation in the beef breeds.

(1) They should usually be kept on the ranges and on large arable farms where it is not practicable to milk them.

(2) They suckle their calves up to the weaning period and then go dry.

VI. Adaptation in the dairy breeds.

(1) They should be kept by dairymen who are chiefly concerned in dairy production.

(2) The calves not wanted for breeding should be sent to the block at a comparatively early age, as

(3) The dairy form becomes more pronounced with advancing maturity, and the relative meat value correspondingly declines.

VII. Adaptation in the dual-purpose breeds.

(1) They should be kept on the arable farm where the farmer is seeking a return in both meat and dairy products, and

(2) They should invariably be milked and the progeny reared by hand.

VIII. The following enumeration of the breeds in America which belong to these respective classes is submitted as being approximately correct:

(1) Beef breeds: Shorthorn, Hereford, Aberdeen-Angus Poll, Galloway, Sussex and West Highland.

(2) Dairy breeds: Holstein, Dutch Belted, Ayrshire, Guernsey, Jersey, French Canadian and Kerry.

(3) Dual-purpose breeds: Shorthorn, Polled Durham, Brown Swiss, Red Poll and Devon.

IX. Observations.

(1) It has been the aim to place all the breeds enumerated under VIII in the order of relative size, beginning with the largest, but the average of size in some of the breeds is not far different.

(2) The classification of Shorthorns as beef and also as dual purpose is based on the large use that has been made of them as beef and dual-purpose cattle.

(3) The Polled Durhams are very similar, but more attention probably has been given to the development of their milking qualities.

(4) Milking properties are somewhat more pronounced in the Red Poll breeds than beefing properties, while these would seem to be about equal in the Devons.

(5) Classes for dual-purpose cattle were first created at the World's Fair, held in Chicago, 1893.

(6) Dual-purpose cattle are numerous found among grades of various blood elements, but more especially among those distinctively of Shorthorn lineage.

LECTURE NO. 4.

INDICATIONS OF CORRECT FORM COMMON TO THE BEEF BREEDS.

I. All the beef breeds have certain features of form which they possess more or less in common.

(1) These may be considered essential to good beef production.

(2) The differences between them relate more to size and to breed peculiarities than to essential features of form.

II. The more essential indications, important perhaps in the order named, are:

(1) A compact form, that is, one wide and deep throughout and but moderately long in the coupling.

(2) A good back, that is, one wide from neck to tail, well fleshed and straight.

(3) A good front quarter, that is, one wide, deep and full.

(4) A good hind quarter, that is, one long, wide and deep.

(5) Good handling qualities, as indicated in soft and elastic flesh and pliant skin.

III. Indications of correct form given in detail.

(1) *Size*—The size should be medium to large for the breed and the bone medium.

(2) *General Outline*—The body should resemble a parallelogram in shape and should be equally and smoothly developed throughout.

(3) *Head*—The head should be medium in size, inclining to short rather than to long, clean cut, broad between the eyes, only moderately dished, and level across the top, save in the polled breeds.

(a) *Nose*, moderately fine, neither dished nor Roman and of medium length.

(b) *Muzzle*, broad, full, distinct and dewy.

(c) *Nostrils*, large.

(d) *Eyes*, large, full, clear and calm.

(e) *Horns*, absent or varying according to breed, not coarse and set on a level with the withers, back and tailhead.

(f) Ears, medium in size, broad rather than long, not over sensitive nor yet sluggish, and well covered with hair, but varying somewhat in the different breeds.

(4) *Neck*.—Medium to short, longer in the female and also finer.

(a) It should not be coarse at the junction with the head, and

(b) It should gradually deepen and widen toward the neck vein so as to blend insensibly into the shoulder.

(5) *Back*.—Wide from the base of the neck to the tail-head, well covered with flesh, especially on the loin, straight and level.

(6) *Forequarters*.—Wide, deep and full and about equally developed with the hindquarters.

(a) Withers, wide and level.

(b) Shoulders, well developed, laid well back toward the ribs and forward toward the neck vein, sloping but gradually and neither prominent nor bare.

(c) Chest, capacious.

(d) Breast, broad, deep and full.

(e) Brisket, broad and well rounded.

(f) Arm, broad, full and tapering nicely toward the knee.

(7) *Barrel or Coupling*.—Only moderately long, but wide and deep, and more roomy in the female.

(a) Ribs, well sprung, that is, rounding out nicely from the spinal column, long, close spaced, not readily apparent to the eye, and coming well forward and backward.

(b) Crops, well filled throughout.

(c) Fore flank, full and deep.

(d) Hind flank, deep, full and thick.

(e) Underline, straight, or nearly so.

(f) Girth, good around the heart and about equally good at the hind flank.

(8) *Hindquarters*.—Long from hook point to tailhead, deep from hook point to hind flank and hock, and thick from side to side.

(a) Hips, full in every part.

(b) Thigh, broad and full and tapering gradually toward the hock.

(c) Buttock, square and upright, but in some breeds a little rounded.

(d) Twist, full and commencing far down.

(e) Tail, broad at the tailhead, but fine rather than coarse and hanging at right angles with the line of the back.

(9) *Legs*.—Medium to short, straight, fine below the knee, standing firmly under the body, and yet a fair distance apart.

(10) *Skin*.—Of medium thickness, but varying with the breed, mellow and elastic, and well covered with hair mossy to the touch.

(11) *General Appearance* —There should be a nicely balanced development and an easy and active carriage, but not sprightly or sluggish.

(a) There should be an absence of all undue prominences, as at the shoulder points, the hook points and the pin bones, also.

(b) An absence of patchiness when in high flesh, as at the shoulders, hook points and rumps.

LECTURE NO. 5.

INDICATIONS OF CORRECT FORM AND FUNCTION COMMON TO THE DAIRY BREEDS.

I. All the dairy breeds have certain features of form and function which they possess more or less in common.

(1) These may be considered essential to good performance in the dairy.

(2) The differences between them relate more to size and breed peculiarities than to essential features of form and function.

II. The more important indications, important perhaps in the order given, are:

(1) Much length and depth in the barrel or coupling, indicating a large consumption and utilization of food.

(2) Refinement of form, as evidenced more particularly in the head, neck, withers, thighs and limbs.

(3) Good development of udder and milk veins.

(4) Constitution, as indicated by a capacious chest, much width through the heart, a broad loin, a full, clear eye, and an active carriage. (See Note VIII below.)

(5) Downward and yet outward sprung and open spaced ribs, covered with a soft, pliable and elastic skin.

III. Indications of correct form and function given in detail.

(1) *Size*—The size should be medium to large for the breed.

(2) *General Outline*—The triple wedge shaped formation has long been considered essential, although it is not very explicit. It implies

(a) Increasing width from the withers downward.

(b) Increasing width toward the rear parts.

(c) Some increase in distance between the top and bottom lines as they go backward.

(3) *Head*—The head should be medium to fine, clean cut and relatively longer, lighter and more dished than in the beef breeds.

- (a) Forehead, broad and dishing.
 (b) Nose, fine.
 (c) Muzzle, medium to broad and moist.
 (d) Nostrils, large and open.
 (e) Cheeks, clean and spare.
 (f) Eyes, prominent and lively.
 (g) Poll, medium to wide, according to breed.
 (h) Horns, fine.
 (i) Ears, medium, with ample secretions, thinner than in the beef breeds and somewhat livelier.
- (4) *Neck*—Inclining to long and light, almost slim.
 (a) It should be fine at the junction of the head and should widen and deepen only gradually.
 (b) The junction with the body should be well defined, almost abrupt in character.
- (5) *Back*—Narrow at the withers, wide at the loin, and at least moderately so at the pin bones, and straight or swayed according to breed and individuality.
 (a) A straight back is to be preferred, other things being equal.
 (b) The spinal column should be large, well defined and open spaced.
 (c) There should be more or less of a downward slope from the crupper to the outer edge of the hip.
- (6) *Forequarters*—Lighter than the hindquarters, and spare.
 (a) Withers, narrow.
 (b) Shoulders, not heavy, pronounced in their upward slope toward one another, and more or less abrupt in front.
 (c) Chest, wide through the heart and capacious.
 (d) Breast, wide below, but not prominent.
 (e) Brisket, wedge-shaped.
 (f) Arm, inclining to light.
- (7) *Barrel or Coupling*—Long, deep, capacious, in a sense, paunchy.
 (a) Ribs, broad, wide spaced, with a deep downward and outward spring, and much space between the last rib and hook point.
 (b) Crops, steep, but not necessarily depressed.
 (c) Fore flanks, fairly well filled.
 (d) Hind flanks, thin but not sunken.
 (e) Underline, more or less sagged.
 (f) Girth, at least fairly good around the heart, and increasingly so at the hind flank.
- (8) *Hindquarters*—Long, but varying somewhat in the breeds, wide at top of the hips and coming well down, but without fullness.
 (a) Hips, not heavy, but more heavy in some breeds.
 (b) Thighs, inclining to light, thin and more or less incurved.

(c) Buttock, upright or receding somewhat toward the thigh.

(d) Pin bones, prominent and wide spaced.

(e) Twist, open, placed high, and roomy.

(f) Tail, not coarse, tapering, of good length, and hanging at right angles to the back.

(g) *Escutcheon*—Well defined and well developed from the perineum to the udder and extending well outward on the thighs.

(a) Breadth below the perineum is said to denote prolonged milking qualities.

(b) Width at the thighs is said to indicate deep milking qualities.

(10) *Udder*—Long, broad and deep, extending well forward and well up behind, and evenly quartered.

(a) It should be well let down, but not pendulous, and the skin should hang in loose folds behind when the udder is empty.

(b) In quality, it should be fine and elastic, glandular, not fleshy.

(c) The hair on the udder should be soft and not plentiful.

(d) The veins on the same well defined.

(e) The teats of medium size and squarely placed or pointing slightly outward.

(11) *Milk Veins*—Large, tortuous, preferably branched and entering the abdominal wall well forward and through large orifices, usually called milk wells.

(a) More commonly there are but two milk wells, but more are much prized.

(b) The veins increase in size with advancing age in the animal.

(12) *Legs*—Medium in length, fine in bone and straight, at least fairly wide apart and yet well under the body.

(13) *Skin*—Medium to fine, finer than in the beef breeds, easily movable, and covered plentifully with fine, soft hair.

(14) *General Appearance*—The carriage should be active, the prominences at the angles and also the ribs distinctly apparent, and there should be evidences of a tendency to spareness in form when in milk.

IV. The males as distinguished from the females.

(1) They should be stronger in bone and more masculine throughout, especially in the head and neck, and not so rangy in body or limb.

(2) The first requisite is constitution as indicated by a capacious chest, much width through the heart and an active carriage.

(3) Prominent among the evidences of milk transmitting power are

- (a) Easily traceable milk veins in the underline.
- (b) Embryo teats, large and placed well forward and wide apart.
- (c) Amplitude of skin on the rear parts of the underline.

V. Nerve-power, or temperament, the outcome of form, is supposed to influence favorably milk elaboration and the following are prominent among its indications:

(1) A broad and dished forehead with a lively eye and active ear.

(2) Good width at the junction of the spine and skull, and large development of the spinal column.

(3) A forceful disposition the outcome of energy, not of bad temper, and an active carriage.

VI. Prominent indications of abundant milk production:

(1) A roomy, capacious, open-ribbed barrel.

(2) Good development of udder and milk veins.

(3) General refinement and spareness of form, and

(4) Marked indications of nerve-power, as given in Note V.

VII. Prominent indications of quality in milk.

(1) Good handling qualities, as evidenced in a nice, pliant skin.

(2) Skin, creamy to a rich yellow in color, more especially inside the ears, at the flanks and around and over the udder.

VIII. Leading indications of good constitution and vitality given in detail.

(1) Absence of extreme refinement in head, neck and limbs.

(2) A full, clear and restful eye.

(3) Much width of chest cavity and much of roominess in the same.

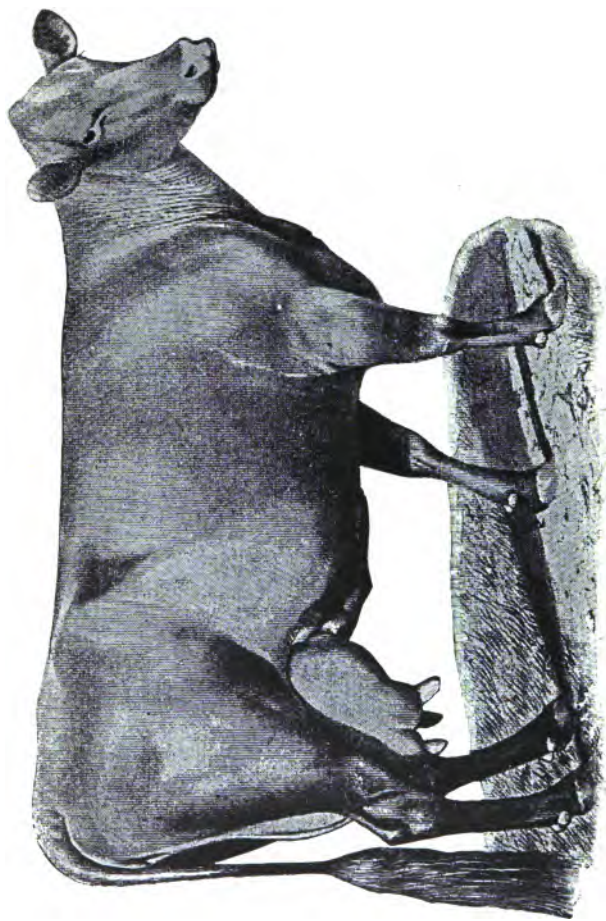
(4) Large development of the spinal column.

(5) Much width at the loin, with distinctness in the pelvic arch and roominess in the pelvic cavity.

(6) Activity in the secretions of the skin, and

(7) Active and easy movement.





(18)

Fig. 1. Typical Dual-Purpose Cow

LECTURE NO. 6.

INDICATIONS OF CORRECT FORM AND FUNCTION IN DUAL-PURPOSE CATTLE.

I. Dual-purpose cattle of pure and likewise of mixed breeding have certain features of form which they possess more or less in common.

(1) These may be considered essential to good performance in the production of milk and meat.

(2) The differences between them are such as relate chiefly to size, to breed peculiarities in pure breeds, and to mixed blood elements in grades.

II. The more important indications, important, perhaps, in the order named, are:

(1) Medium to large size for the breed or grade.

(2) Good length and depth in the coupling, especially in the females.

(3) Good development of udder and milk veins.

(4) Good constitution as indicated by good width through the heart.

(5) Head and neck inclining to long and fine, and

(6) Ribs of medium spring, open spaced and covered with a good handling skin.

III. *Lineage*—The best specimens are found in the pure dual-purpose breeds, or in high grades of these, but

(1) Mixed blood elements are not seriously objectionable in foundation animals of correct type, and

(2) In breeding, well chosen pure bred dual-purpose sires should be used.

IV. Indications of correct form and function given in detail:

(1) *Size*—The dual-purpose cow is large in form and capacious in body, not massive like the high type beef animal, neither coarse nor unduly refined, and possessed of what may be termed a happy equilibrium in development.

(2) *General Outline*—The form should be parallelogrammic rather than wedge-shaped, and nearly evenly developed in front and rear.

(3) *Head*—Only moderately large and inclining to long, clean cut and free from throatiness.

(a) Forehead, wide.

(b) Nose, inclining to long and fine.

(c) Muzzle, medium to strong and moist.

(d) Nostril, large and open.

(e) Cheeks, lean.

(f) Eyes, large, prominent and neither restless nor sleepy.

(g) Poll, varying with the breed or grade.

(h) Horns, inclining to fine when present.

(i) Ears, of medium size, thickness and action, but varying with the breed or grade.

(4) *Neck*—Inclining to long and fine, but not slim.

(a) Not coarse at the junction with the head.

(b) Of medium increasing width and depth toward the shoulder, and joining the latter neither abruptly nor so smoothly as in the beef breeds.

(5) *Back*—Moderately wide at the withers, wide at the loin and pin bones, and straight.

(6) *Forequarters*—Nearly equal in development with the hindquarters.

(a) Withers, moderately wide.

(b) Shoulders, large, but not prominent, and possessed of medium upward and forward slope.

(c) Chest, wide through the heart, capacious.

(d) Breast, wide, moderately deep and full.

(e) Brisket, wide and but moderately full.

(f) Forearm, broad and but moderately full.

(7) *Barrel or Coupling*—Long, deep, roomy, capacious.

(a) Ribs, at least fairly well sprung and deep, well spaced, easily discernible when the animal is giving milk, and possessed of good space between the last rib and hook point.

(b) Crops, filled up level, or nearly so, with the shoulder.

(c) Fore flanks, low and full.

(d) Hind flanks, low, moderately full and of medium thickness.

(e) Girth, good at the heart and at least good at the hind flank.

(f) Underline, straight or slightly rounded downward.

(8) *Hindquarters*—Long, wide, deep and but slightly dropping away from the sacrum and crupper.

(a) Hips, straight on the sides.

(b) Thighs, broad and in a line externally with the hips, and possessed of but little or no incurvature behind.

(c) Buttocks, straight, or nearly so.

(d) Pin bones, wide, but not prominent.

(e) Twist, open and placed moderately low.

(f) Tail, inclining to fine and long, smoothly set on and hanging at right angles with the body.

(g) *Udder*—Capacious, evenly quartered, coming well forward and backward and not too high or too low.

(a) When empty it should be pliant, not fleshy, and with much loose skin hanging in folds at the rear.

(b) The teats should be of good size and pointing slightly outward.

(10) *Milk Veins*—Large, long, tortuous, all the better if branched, and they should enter the body through large orifices or milk wells.

(11) *Legs*—Medium in length and bone, straight and widely placed.

(12) *Skin*—Medium, inclining to fine, easily movable, particularly on the ribs, and plentifully covered with soft hair devoid of coarseness or harshness.

(13) *General Appearance*—The large, refined and fairly smooth form of the dual-purpose animal carries along with it evidences of producing capacity.

(a) In movement it is neither sprightly nor sluggish, but easy.

(b) When in milk it is not high fleshed, but puts on flesh quickly when dry.

V. The more important points of contrast between the males and females:

(1) The former are heavier and stronger and shorter in head, horn, neck and limbs.

(2) They have relatively more of breast development and are relatively a little shorter in the coupling.

VI. Dual-purpose cattle contrasted with beef cattle.

(1) In general outline the former are less massive, not so even in their proportions and not so smooth.

(2) In size they are about the same, but do not weigh so well.

(3) They are a little longer in the head, neck, limbs and barrel.

(4) They are not so wide at the withers, are a little less full in the breast, shoulders, hips and twist, and are not quite so rounded or close spaced in the ribs, and

(5) The development of udder and milk veins is much more marked.

VII. Dual-purpose cattle contrasted with dairy cattle.

(1) In general outline the former are usually much larger and heavier, the fore and hindquarters are more evenly balanced, the angular points are not so prominent and the form is not so spare.

(2) The withers are wider, the spinal column less prominent and the back straighter.

(3) The breast is more strongly developed, the spring of rib rounder, the hips and thighs heavier and the bone somewhat larger.

(4) In general development of head, neck, body, udder and milk veins, the difference is not greatly marked.

THE BEEF BREEDS

LECTURE NO. 7.

SHORTHORN CATTLE—THEIR ORIGIN AND HISTORY.

I. This breed of cattle is so named from the shortness of the horns which characterize it.

(1) It is also known as the Durham, from the county in which it originated.

(2) These terms are now regarded as synonymous and interchangeable.

II. The precise origin of the Shorthorn, like that of nearly all the other British breeds of cattle, is involved in much obscurity.

(1) The Romans, Saxons, Danes and Normans, who conquered England, in turn brought cattle with them that were successively crossed on the native breeds, and this in part accounts for the variety of these.

(2) The lack of interchange in live stock for centuries after the Norman conquest favored the development of distinctive types, through the modifying influences of climate, soil, shelter and treatment.

(3) Thus it was, that in the rich pasture lands of the counties of Durham and Yorkshire, and especially in the valley of the River Tees, a comparatively large type of cattle existed several centuries ago, the ancestors of our modern Shorthorns.

(4) For a long time there were two independent strains of ancestry, *viz.*: The Teeswater and the Holderness; but these have long since been blended through the almost indiscriminate crossing of their descendants.

III. Those Teeswater and Holderness progenitors of the modern Shorthorn possessed high and broad carcasses, good milking qualities and an aptitude to fatten; but their flesh was coarse and accompanied by a large amount of offal.



Fig. 2. Typical Shorthorn Bull

IV. It is alleged and as stoutly denied that improvements were effected on the Teeswater and Holderness cattle by the use of Dutch bulls and on the improved Shorthorn by the introduction of a Galloway cross.

(1) It is pretty certain, however, that a Dutch cross was introduced about the year 1640, and also at a subsequent period or periods.

(2) The Colling Bros. introduced a Galloway cross known as "the Alloy" about the end of the eighteenth century.

V. Several good herds of Shorthorns existed in England, in the northern counties, as early as the middle of the eighteenth century.

(1) Notable among these were the herds of the Earl of Northumberland, Sir Wm. St. Quinton, Millbank, Croft, Stevenson, Maynard and Wetherell.

(2) The average size of the cattle in those days was larger than it is now, but they were not equal to the cattle of to-day in quality, symmetry and early maturing properties.

VI. The following include the more noted of the early improvers of Shorthorns:—

(1) The Colling Bros. of Ketton, who commenced their work of improvement about 1780, or somewhat earlier.

(a) They selected their foundation stocks wherever they could get good animals.

(b) They aimed at reducing the frame and improving the general symmetry and fleshing properties of their favorites.

(c) They bred many famous bulls, and also the "Durham Ox" and the "White Heifer that Traveled."

(d) The purchases made at the dispersion sale of the Colling Bros., in 1810, did much to improve the Shorthorn herds in England.

(2) Thomas Bates, a faithful disciple of the Colling Bros., who commenced breeding Shorthorns at Kirklevington late in the eighteenth century.

(a) The Princess, Duchess and Oxford families, were among the most famous of the tribes which he founded.

(b) Mr. Bates died in 1849, and his herd was dispersed in 1850.

(3) Richard Booth, who founded the famous herd at Studley about 1790, a work well sustained at a later period by his sons, Thomas and John, at Warlaby and Killerby, respectively.

(a) The special aim of R. Booth was to lengthen the hind quarter, to fill up the fore flank, to secure greater depth of flesh and a strength of constitution that would stand forcing well.

(b) The Booth bulls have been found great improvers of herds into which they have been introduced.

(4) Amos Cruikshank of Sittyton, Aberdeenshire, Scotland, who may be regarded as the originator of Scotch Shorthorns.

(a) The many tribes of this famous herd were built upon a mixed Bates and Booth foundation.

(b) It was founded in 1837 and dispersed in 1889.

VII. The Bates, Booth and Cruikshank cattle contrasted.

(1) The Bates Shorthorns were distinguished by their size, good milking qualities, cleanness of head, neck and limbs, and elegant style.

(2) The Booth Shorthorns were equally large, possessed greater heart girth and length of hind quarter, and more depth and mellowness of flesh, but in instances not a few they were plain in the head, strong in the horn and deficient in style.

(3) The Cruikshank cattle, or Scotch Shorthorns, were less in size than either the Bates or Booth cattle, but they were more compact and blocky in build, took on flesh more readily, and were superior when placed on the block.

(4) Scotch Shorthorns have been great prize winners during recent years.

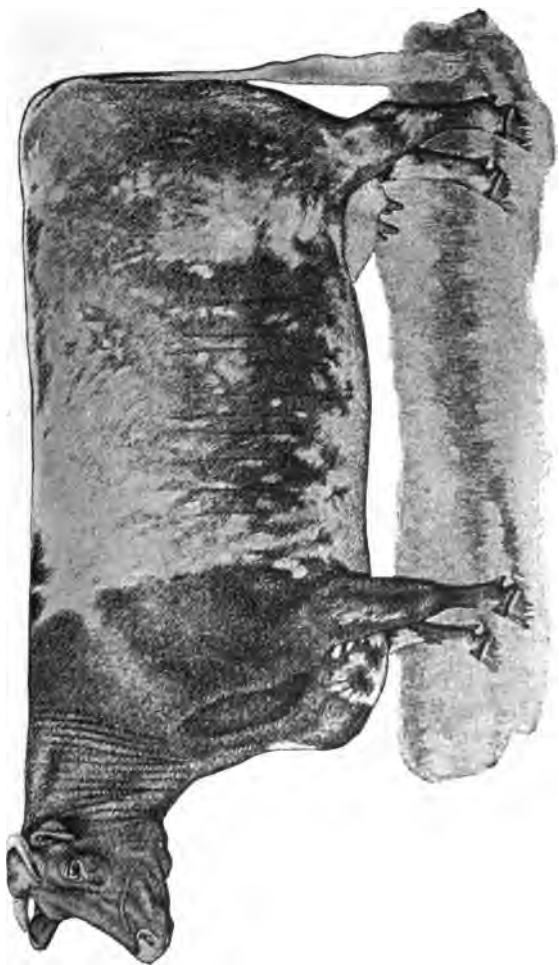


Fig. 3. Typical Shorthorn Cow

LECTURE NO. 8.

SHORTHORNS — THEIR DISTRIBUTION IN OTHER COUNTRIES.

I. First importations to America.

(1) Between 1783 and 1795 Messrs. Goff and Miller of Virginia imported Shorthorn cattle of both sexes into Baltimore, Md.

(2) Some of their descendants were taken to Kentucky, where they effected much improvement upon the native stocks of that State.

(3) But little is known of the exact genealogy of these cattle, although it has been a fruitful subject of discussion.

II. Importations to other States.

(1) The first direct importation of Shorthorns into New York State was made by Samuel M. Hopkins of Moscow in 1815.

(2) The first direct importation was made into Kentucky in 1817, by Col. L. Sanders of Grass Hill.

(3) The first direct importation was made into Massachusetts in 1817 by Steven Williams of Northboro.

III. Other importations to the United States.

(1) From 1817 onward, importations of Shorthorns from England have been made almost every year until the present time.

(2) Notable among those in point of time were the importations made by the Ohio Company for Importing English Cattle, of Chillicothe, O., in 1834 to 1836.

(3) Kentucky, New York and Ohio early became noted centers of the breed.

IV. Prominent Shorthorn breeders.

(1) They are so many that their names even cannot be given here, much less can the grand, good work they did be noticed.

(2) Lewis F. Allen of New York and William Warfield of Kentucky stand foremost among their advocates.

V. The New York Mills sale.

(1) The most notable sale of Shorthorns ever held was that of Messrs. Campbell and Walcott of New York Mills, N. Y., in 1873.

(2) The 108 animals sold of all ages aggregated \$382,000.

(3) One Duchess cow was sold for \$40,600, the highest price ever bid for a cattle beast.

VI. Importations into Canada.

(1) The first importation of Shorthorns was made into Canada by the New Brunswick Board of Agriculture in 1825, or the year following.

(2) The first importation was made into Ontario by Robert Arnold of St. Catharines in 1832.

(3) The first direct importation of English Shorthorns from Britain into Ontario was made by Roland Wingfield of Guelph in 1833.

(4) Since that time Canada has become famous as an importing center and also as a breeding center of Shorthorns.

(5) Prominent among the Canadian breeders and importers stand out the names of Simon Beattie, Hon. M. H. Cochrane and James I. Davidson.

VII. The Hillhurst herd.

(1) This herd was established by the Hon. M. H. Cochrane in 1865.

(2) In 1877, thirty-two animals were exported from it to England and sold by public auction at Millbeckstock, Bowness, Windermere, at an average of about \$2,500 each.

(3) The tenth Duchess of Airdrie and fifteen of her progeny, bred at Hillhurst and sold at different times, aggregated more than \$175,000.

VIII. Dissemination in countries other than the United States and Canada.

(1) Shorthorns have been exported to nearly every country colonized by Anglo-Saxons and also to many lands where other languages prevail.

(2) Outside of the United States, Great Britain and Canada, they are most numerous found in Buenos Ayres, Australia and New Zealand.

IX. The English herd book.

(1) The first volume of the English Shorthorn Herd Book was published in 1822, by George Coates of Carlton, Pontefract, Yorkshire, England.

(2) Its proprietorship was transferred to Henry Stafford in 1846, after five volumes had been published.

X. The American herd books.

(1) The first volume of the American Shorthorn Herd Book was published by Lewis F. Allen of Black Rock, Buffalo, N. Y., in 1846.

(2) The first volume of the American Shorthorn Record was published by A. J. Alexander of Woodburn, Ky., in 1869.

(3) The first volume of the Ohio Southern Shorthorn Record was published by the Shorthorn breeders of Ohio in 1878.

(4) The American Shorthorn Association purchased the interest in all these American records in 1882, and since that date Shorthorn pedigrees have been published in the American Shorthorn Herd Book.

XI. Canadian herd books.

(1) The first volume of the Canadian Shorthorn Herd Book was published in 1867, of the British-American Shorthorn Herd Book in 1881, of the Dominion Shorthorn Herd Book in 1887.

(2) The last named record has absorbed the records previously published.

XII. Distribution in the United States and Canada.

(1) Shorthorns are now found in almost every state of the Union and in every province of Canada.

(2) Ontario stands first in the number of its recorded Shorthorns.

(3) In the United States they are probably most numerous in Illinois and Iowa in the order named, but they are also quite numerous in nearly all the Central States, especially Ohio, Indiana and Kentucky.

XIII. Registration in the United States and Canada.

(1) Forty-five volumes of the American Shorthorn Herd Book have been issued and fifteen volumes of the Dominion Shorthorn Herd Book.

(2) In the American Shorthorn Herd Book, 367,950 animals have been recorded, of which 134,566 are males and 233,384 females.

(3) In the Canadian Herd Books, 62,071 animals have been recorded, making a total in these two countries of 430,021.

LECTURE NO. 9.

SHORTHORNS—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) Shorthorns have unquestionably been the most popular breed of cattle in the world during the whole of the present century.

(2) Of this we have abundant evidence in the fact that they are cosmopolitan to an extent far in advance of any other breed.

(3) As enduring popularity is always the result of merit, we find in the favor shown to Shorthorns a proof of their great utility.

II. Adaptability.

(1) They possess much power of adaptation to the varying conditions of life, as changes of soil and food products and climatic conditions, but they flourish best in temperate zones.

(2) They are best adapted, however, to arable countries, level or gently undulating, rich in agricultural production, and where much meat and milk are desired on the same farm.

(3) In point of hardihood they are at least medium.

III. Relative size.

(1) In size and weight they have something of a lead over all breeds as yet introduced into this country.

(2) This is owing to their greater scale, combined with good all-round development.

IV. Early maturing qualities.

(1) In early maturing properties they stand second to no breed, and are superior to many.

(2) With suitable food and good care they may be made quite ripe for the block at the age of two and a half years.

(3) Under average conditions they attain a maximum of growth at about four years.

V. Grazing qualities.

(1) These are only average, since the heavy frames possessed by Shorthorns render them less active as foragers, hence

(2) When being grazed, the pastures should furnish them with plentiful supplies.

VI. Feeding qualities.

(1) These are of the first order.

(2) They make a good use of the food given them, are contented under confinement, will feed well for a long period, stand forcing well and lay on flesh evenly and deeply.

VII. Quality of meat.

(1) Shorthorns furnish meat tender, juicy and nutritious, and

(2) They kill well, as the proportion of bone and offal is relatively small, but

(3) The fat and lean are not quite so well intermixed as with some breeds, the grain of the flesh is not so fine nor is the meat so highly flavored.

VIII. Milking qualities.

(1) In the last century and during much of the present, Shorthorns generally were possessed of good milking qualities.

(2) Several families still retain these, more especially in England, where, as a breed, they still rank high for dairy uses, but

(3) These qualities have been much impaired not only in Britain, but more especially in America, through the lines of breeding and management adopted.

(4) However, during recent years much more attention is being given to the restoration of good milking qualities.

(5) The milk is excellent for calf rearing, and may be used with advantage in making butter and cheese.

IX. Value in crossing and grading.

(1) No breed has been equally useful for purposes of crossing, either upon grade cattle or upon pure breeds of other breeds.

(2) They have wrought a wonderful improvement upon the common cattle of Ireland, North and South America, Australia, New Zealand and some other countries.

(3) Nearly all the cattle exported to Britain from these countries are Shorthorn grades.

(4) They impart to other breeds, and especially to grades, size, form, quality, rapid growth, early maturity, marked fattening properties, and in many instances good milk production, hence

(5) When properly bred they are particularly adapted to the production of grades of the dual-purpose type.

X. Weak points.

(1) In some instances they are possessed of an impaired constitution, resulting from in-and-in breeding and the highly artificial treatment to which they have been subjected, and

(2) In other instances they inherit a tendency to sterility, more especially where they have been forced in their feeding.

LECTURE NO. 10.

SHORTHORNS—THEIR PRINCIPAL POINTS.

In the absence of an authorized scale of points, the following is submitted:—

I. *Size*—The size should be relatively large, but medium for the breed.

(1) The fore and hind quarters should be equally well developed.

(2) Compactness of form is more important in the male, but it is essential in the female as well.

II. *Head*—Small in proportion to the size of the animal, clean cut, handsome and well set on, longer and narrower in the female, but stronger in the male.

(1) Forehead, broad between the eyes.

(2) Face, slightly dished in the female, and tapering gracefully below the eyes to the nostril.

(3) Nose, medium in size and straight. *light red in color*

(4) Muzzle, medium to broad, full and moist and flesh colored.

(5) Nostrils, large and fairly expansive.

(6) Cheeks, not heavily fleshed, the lower jaw in the female thin.

(7) Eyes, large, full, bright, intelligent, calm.

(8) Ears, medium in size and thickness, well covered with soft hair, somewhat erect and possessed of an average amount of play.

(9) Poll, fairly broad and level.

(10) Horns, short but longer and finer in the female, flat rather than round at the base, spreading and curving gracefully forward, with a slightly downward or upward tendency, and of a creamy white or yellowish color.

III. *Neck*—Medium in length, strong and arched in the male, but finer in the female, and grad-

ually widening and deepening and slightly rounding as it approaches the shoulder.

(1) It should spring straight from the back, should set well into the shoulder and brisket and should carry the head gracefully.

(2) The throat should be clean cut and without dewlap.

IV. *Body*—Long, broad, deep, only moderately long in the coupling and rectangular, almost a parallelogram, and evenly covered with firm flesh.

(1) Back, straight, wide and level from withers to tail-head, broad and well filled in the loin, and well fleshed throughout.

(2) Withers, broad.

(3) Shoulders, well developed and lying well within the body, blending nicely with the neck in front and crops behind and well covered.

(4) Forearm, strong and broad where it joins the body and tapering gracefully to the knee.

(5) Breast, full, wide and deep, and the chest capacious.

(6) Brisket, broad and well rounded.

(7) Crops, full.

(8) Ribs, springing well and level from the backbone, coming well down, and so filling the space behind the shoulder and in front of the hooks, that the animal will appear straight and level from the shoulder to the buttock.

(9) Heart girth and flank girth, good, and about equal.

(10) Hind quarters, long and full from the hooks to the pin bones, deep throughout and broad in every part.

(11) Hips, broad and on a level with the back and loin.

(12) Hind flank, full, deep and thick.

(13) Thigh, broad, full and well fleshed within and without.

(14) Rumps, broad but not prominent.

(15) Buttock, broad and square.

(16) Twist, deep and full, and placed low.

(17) Tail, rather fine, somewhat broad at the top, but level, set perpendicularly on a level with the back and not too much covered with hair.

V. *Udder*—Broad and full, extending well forward along the belly and well up behind and evenly quartered.

(1) Teats of good size and squarely placed, well apart, and having a slight oblique pointing outward.

(2) Milk veins, large, tortuous and swelling, and with fairly large orifices leading into the body.

VI. *Legs*—Short, and well placed under the animal, fine and clean below the knee, and fine, clean and flat below the hock.

(1) Hocks, somewhat straight and short, and turning neither outward nor inward.

(2) Foot, flat, and in shape an oblong semicircle.

VII. *Skin*—Of medium thickness, finer in the female, mellow and elastic to the touch, of a cream or orange color, and well covered with an abundance of fine, soft hair.

VIII. *Color*—The standard colors are red, white and roan.

(1) Red is most in favor, white is now considered objectionable, and red and white spots alternating are not in favor.

(2) All shades of roan are admissible, but red roan is preferred.

(3) The skin around the eye and bald of the nose should be a rich cream color.

IX. *General Appearance*—Shorthorns should have large, rectangular and yet compact development of body, smoothness of outline, symmetry of form and gracefulness of carriage.

LECTURE NO. 11.

HEREFORD CATTLE—THEIR ORIGIN AND HISTORY.

I. But little is known regarding the origin and history of Hereford cattle prior to the last half of the eighteenth century.

(1) John Speed in a book published in 1627, speaks well of the cattle of Herefordshire.

(2) The next reference is made by Marshall in 1788. *See page*

(3) His description of a Hereford ox would answer well for one of the present day.

II. A careful analysis of the somewhat conflicting statements of the principal writers on Herefords pretty certainly establishes the following:—

(1) That Hereford cattle are descended from one or more of the aboriginal breeds of Great Britain, and that in this respect they share a common ancestry with the Devon and Sussex breeds.

(2) That the original color as in the case of the Devon and Sussex was probably a whole red.

(3) That at an early period the white cattle of Wales were crossed upon the native stocks, thus enlarging their frames and imparting a tendency to white markings.

(4) That the white markings thus originated were further entamped by a cross of white-faced Flemish cattle imported by Lord Scudamore from Flanders prior to 1671, and by using certain other white-faced bulls obtained in various parts of England.

(5) That the white face, though generally recognized as indicating purity of breeding for some time prior to the close of the last century, was not universal, as some of the animals had mottled faces and some were possessed of but little white of any kind.

(6) That the greater size of the Herefords as compared with the Devon and Sussex breeds is owing to the abundance of the food products in Herefordshire, and to the effect of crossing them by animals of large size.



(38)

Fig. 4. Typical Hereford Bull

(7) That the Hereford cattle were noted for their good grazing and beef making properties in the eighteenth century, and

(8) That the oxen were extensively used for purposes of labor prior to the nineteenth century.

III. The most noted of the early improvers of Hereford cattle were Benjamin Tompkins, father and son, but the latter was the more noted of the two.

(1) The elder Benjamin Tompkins, born at New House, Kings Pyon, in 1714, died in 1789.

(2) The younger Benjamin Tompkins was born at the Court House, Canon Pyon, in 1745, and died at Wellington Court in 1815.

(3) Many of the best herds afterward built up in England rested upon foundation stocks purchased from the younger Tompkins.

(4) Like Bakewell, he improved his cattle through the most careful selection in mating and through in-and-in breeding.

(5) At the dispersion sale of his stock in 1819, the breeding animals sold for an average of more than \$700 each.

IV. Prominent among the early improvers of Herefords are the names of Galliers, Tully, Skyrme and Haywood, and somewhat later the names of John Price and John Hewer.

(1) At the four sales held by John Price it is said that he realized not less than \$100,000 for Herefords.

(2) Some of the animals bred by John Hewer were of extraordinary size.

V. Progress of Herefords early in the century.

(1) Prior to 1835 herds had been established in fifteen English and Welsh counties.

(2) During the first half of the century Herefords won more prizes at the Smithfield London Show than the animals of any other breed. *1799 - first show*

VI. Some influences which hindered the dissemination of Herefords.

(1) Their milking powers were not equal to those of some other breeds, notably the Shorthorn.

uniformity of color

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bug*

(2) The unfortunate controversy carried on toward the middle of the century between the breeders of the mottled-faced and white-faced varieties respectively.

(3) They were not advertised in the same way or to the same extent as the Shorthorns, and

(4) The want of organized effort on the part of the breeders until a comparatively recent period greatly hindered the dissemination of the breed.

VII. Distribution of Herefords.

(1) They have been reared to some extent in Scotland, Ireland, Jamaica, Canada and Australia, and

(2) They have become numerous and popular in many of the prairie sections of both North and South America.

VIII. Importations to the United States and Canada.

(1) The first accredited importation was made into the United States by the Kentucky statesman, Henry Clay, in 1817.

(2) Several sundry importations were made to various states between 1817 and 1839, but during that interval Herefords do not seem to have made much progress.

(3) Between 1839 and 1843, William H. Sotham, who has probably done more than any one person to advance the Hereford interest in the United States, made three successive importations into the state of New York.

(4) In 1860 and subsequently, F. W. Stone of Guelph, Ont., imported and bred many excellent animals, and from these many of the herds of the United States have either been built up or greatly enriched.

(5) Thomas Aston of Elyria, O., was the third of the leading importers prior to 1880, since when the distribution of Herefords has been phenomenal.

(6) Among the leading importers and breeders of the last two decades the names of C. Culbertson, Newman, Ill., T. L. Miller, Beecher, Ill., and Thomas F. B. Sotham, Chillicothe, Mo., stand out pre-eminent.

IX. Associations formed.

(1) The American Hereford Cattle Breeders' Association was organized in 1881.

(2) The Hereford Cattle Breeders' Association of England was formed in 1884.

X. Distribution in the United States and Canada.

(1) Nearly every state in the Union and nearly every province of Canada has its quota of Herefords, but



(41)

Fig. 5. Typical Hereford Cow

(2) They are most numerous in the Central Mississippi basin, and in the range states west of the Mississippi and south of the Missouri.

(3) The most important breeding centers are Missouri, Kansas, Nebraska, Illinois and Indiana.

XI. Registration in the United States.

(1) The first volume of the American Hereford Record was published in 1880 and of the English Hereford Herd Book in 1884.

(2) Twenty volumes of the American Record have been issued and 95,000 animals have been recorded therein, of which about one-half are males.

LECTURE NO. 12.

HEREFORD CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) In the last century and during the early part of the present one, Herefords were equally popular with Shorthorns, but

(2) Since that time Shorthorns have been more in favor with the average farmer, unless in rich pastoral districts.

II. Adaptability.

(1) Herefords, like Shorthorns, readily adapt themselves to the changed conditions of soil and climate, and their marked docility is eminently favorable to such adaptation.

(2) They are well adapted to arable countries, level or gently undulating, and capable of rich production in grain and pastures.

(3) They have proved themselves eminently fitted for range conditions, such as prevail in the western and southwestern states.

(4) Although they have proved hardy in northern latitudes, they would seem better adapted relatively than the Shorthorns to warm temperatures.

III. Relative size.

(1) In average size and weight, as a breed, they are almost equal to the Shorthorns, while

(2) In many instances individual animals outweigh Shorthorns.

IV. Early maturing qualities.

(1) In early maturing qualities they are fully equal to the Shorthorns.

(2) Like the latter, with good feeding, they may be made quite ripe for the block at two and one-half years.

V. Grazing qualities.

(1) Their grazing properties are decidedly superior, since they take on flesh rapidly on good pastures, and

(2) Their grades have shown much capacity for well doing on the dry and not overabundant pastures of the open range.

VI. Feeding qualities.

(1) In feeding qualities they stand much on the same plane as Shorthorns.

(2) They make a good use of the food given them, and lay on flesh most heavily on the parts of the frame from which the best meat is cut, as the back and loin, but

(3) Under heavy forcing they are somewhat inclined to patchiness.

VII. Quality of meat.

(1) The quality of the meat is very good, and finds much favor with butchers and consumers.

(2) It is juicy and tender, the fat and lean are nicely blended, and the proportion of the lean to the fat is large, and

(3) The proportion of the dressed meat to the live weight is relatively large.

VIII. Milking qualities.

(1) The milking properties of Herefords were at one time fairly good, but they have been much impaired through the system of breeding and management adopted.

(2) The quality of the milk is good, but it is oftentimes deficient in quantity.

IX. Value in crossing and grading.

(1) Herefords cross well with some breeds, as Shorthorns and Galloways, but not so well with others, as Devons and West Highland cattle.

(2) In crossing with Shorthorns the best results have been obtained when the male was Hereford.

(3) Herefords answer well for crossing upon grades and common stocks when meat-making is the object sought.

(4) Hereford grades are probably more numerous on southwestern ranges than those of any other breed.

X. Breeding qualities.

(1) The breeding qualities of Herefords are good.

(2) When submitted to high pressure feeding, they still usually breed with regularity and oftentimes they breed to an advanced age.

(3) They are said to be less subject to abortion and to milk fever than some other breeds.

XI. Weak points.

(1) The chief of these as to properties is scant milk production.

(2) As to form, unnecessary dewlap sometimes, and frequently lightness of thigh.

XII. Compared with Shorthorns.

(1) They are probably something ahead in grazing and breeding qualities and in quality of meat.

(2) In size, adaptability, maturing and feeding qualities and utility in crossing, they are not greatly different.

(3) In all-round popularity and in milking properties they are scarcely equal to Shorthorns.

LECTURE NO. 13.

HEREFORD CATTLE—THEIR PRINCIPAL POINTS.

In the absence of an authorized scale of points the following is submitted:—

I. *Size*—Relatively large, but medium for the breed.

(1) The fore and hind quarters should be equally well developed, but

(2) In many instances the hind quarter is relatively light.

(3) Compactness of form is desired in both sexes, but is more sought for in the male.

II. *Head*—The head should be small in proportion to the substance of the body, clean cut and well set on, not coming out too low from the neck. In the bull it should be masculine, but finer in the female and not too long in either sex.

(1) Forehead, broad between and above the eyes.

(2) Face, slightly dished in the female and gently tapering below the eyes.

(3) Nose, medium in size and straight, not too fine.

(4) Muzzle, broad, dewy and cream colored.

(5) Nostrils, large and open.

(6) Cheeks, not heavily fleshed nor coarse.

(7) Eyes, large, full, calm, mild, and surrounded by a cream-colored circle.

(8) Ears, medium in size and thickness, well fringed, fairly erect and active.

(9) Poll, broad and level.

(10) Horns, springing out straightly from the poll, more than medium in length, flat at the base and of a yellow or white waxy appearance.

(a) In the male the curve is in the form of a semi-circle.

(b) In the female it is in the form of a graceful wave, with a slightly spreading upward tendency.

III. *Neck*—Medium in length, strong and arched in the male, but finer in the female and grad-

ually widening and deepening and slightly rounding as it approaches the shoulder.

(1) It should spring straight from the back, should set well into the shoulder and brisket, and should carry the head gracefully.

(2) The throat should be clean cut and without dewlap, but frequently there is more or less of dewlap.

IV. *Body*—Long, broad, deep, not too long in the barrel, rectangular, almost a parallelogram and evenly covered with firm flesh.

(1) Back, straight, wide and level from withers to tail-head, broad and well filled in the loin, and well fleshed throughout.

(2) Withers, broad.

(3) Shoulders fully developed and lying well within the body, blending nicely with the neck in front and crops behind, and well covered.

(4) Forearm, strong and broad where it joins the body and tapering gracefully to the knee.

(5) Breast, full, wide and deep.

(6) Brisket, broad and plump, and often lower than in the Shorthorn.

(7) Crops, full.

(8) Ribs, springing well and level from the backbone, increasingly so toward the back rib, coming well down, and extending well forward and backward, as in the Shorthorn.

(9) Heart girth and flank girth, good and about even.

(10) Hind quarters, long and broad and deep, as in the Shorthorn.

(11) Hips, broad and full and on a level with the back and loin.

(12) Hind flank, full, thick and deep.

(13) Thigh, broad, full and well fleshed within and without, but in many instances it is light.

(14) Rump, broad, but not prominent, and on a line with the back.

(15) Buttock, broad and square.

(16) Twist, deep and full and placed low.

(17) Tail, rather fine, somewhat broad at the top, set on a level with the back and falling in a plumb line to the hocks.

V. *Udder*—Broad, full and long and evenly quartered, but oftentimes it is not possessed of much capacity.

(1) Teats of good size and well placed, as with the Shorthorn.

(2) Milk veins, same as in the Shorthorn, but frequently they are lacking in large development.

VI. *Legs*—Short and well placed under the body, fine and clean below the knee, and fine, clean and flat below the hock.

(1) Hocks fairly straight and short, and turning neither outward nor inward.

(2) Feet, flat and in shape like a semi-circle.

VII. *Skin*—Of medium thickness, but somewhat thicker than in the Shorthorn, mellow and elastic to the touch, and well covered with an abundance of fine, soft hair, in many instances more or less curled.

VIII. *Color*—In color, the face, throat, chest, legs, lower part of the body, crest and tip of tail are a beautiful white, and all other parts are red.

(1) The red should be neither very dark nor light.

(2) A small red spot above the eye and a round red spot on the throat have many admirers.

IX. *General Appearance*—Herefords are characterized by large, rectangular and yet compact development of body, smoothness of outline, mildness of mien, and easy carriage.

X. *Compared with Shorthorns*—They have longer and more spreading horns, more dewlap, lower briskets, rather thicker hides, lighter thighs, more curly coats, and the differences in color mentioned.

LECTURE NO. 14.

ABERDEEN-ANGUS CATTLE — THEIR ORIGIN AND HISTORY.

I. Fossiliferous remains that have been discovered in Britain render it highly probable that the aboriginal cattle from which existing races have been derived were all horned originally, yet

(1) Several varieties of hornless cattle have existed in Britain from time immemorial, some of which have disappeared, hence

(2) The only existing polled breeds at present are the Polled Aberdeen, the Galloway and the Red Polls.

II. The precise causes that have led to the loss of horns have never been exactly understood.

(1) It may have arisen from sudden organic changes, spontaneous, accidental or proper, and was then perpetuated by selection in breeding, as,

(2) It is more than probable that these variations occurred within the period of domestication.

III. Of the four principal breeds of Scotch cattle, the Ayrshires only have an admixture of foreign blood.

(1) The other three, *viz.*, the Aberdeen-Angus, frequently called Polled Aberdeen and Angus, the Galloway and the West Highland are all supposed to be descended from the aboriginal wild horned cattle of Caledonia.

(2) The minor differences which they present are doubtless due to climatic and other influences.

IV. It is highly probable that the Aberdeen-Angus cattle are indigenous to the northeastern counties of Scotland, with Forfar and Aberdeen as their chief centers, as

(1) There is much evidence to show that late in the last century and early in the present, polled cattle were numerous in these counties, and

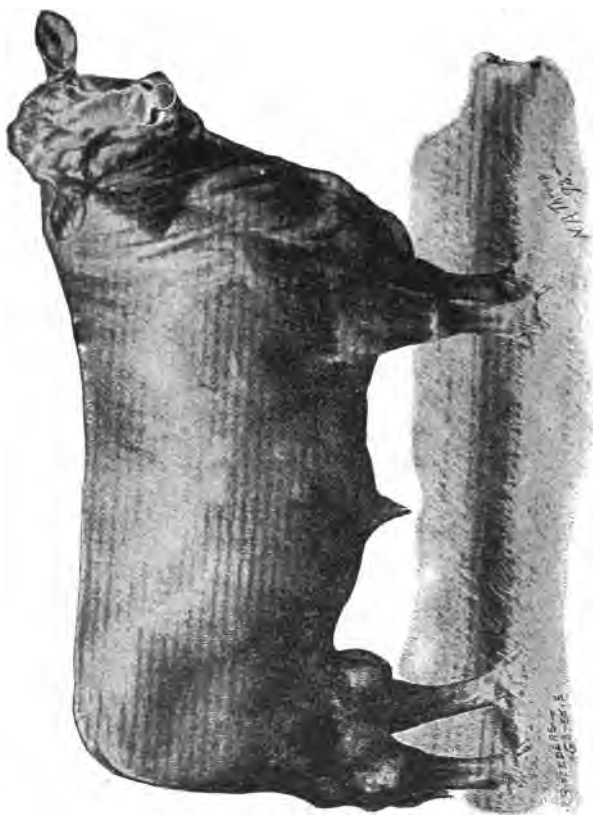


Fig. 6. Typical Aberdeen-Angus Bull

(2) In the ancient horned domestic races of Scotland, there seems to have been a decided tendency to variation in the loss of horns.

V. The Aberdeen-Angus of to-day is no doubt the result of the amalgamation of two sorts of polled cattle inhabiting the districts of Scotland, where, even now, the breed abounds most numerously.

(1) The former of these were puny and thin in flesh, pre-eminently the crofters' cow.

(2) The latter were a larger variety, with better all-round development, but could not stand roughing it so well as the former.

VI. Hugh Watson of Keillor, Meigle, Forfarshire, was the most noted of the early improvers of Aberdeen Polls.

Old Jock (Shathmore)

(1) Both his father and grandfather owned good herds of the same kind of cattle, the latter as early as 1735.

(2) He established the Keillor herd in 1808, and prosecuted the work of breeding with much vigor and success until 1865, when it was dispersed.

*The Prim
(Old) gran
36 yrs.
25 calv*

(3) He bred from those animals only which came nearest to his ideal, and did not seem to care whether they were closely related or not.

(4) He was singularly successful in raising calves, frequently suckling five on one cow.

(5) Nearly 500 prizes were awarded him in leading show-rings of England, Scotland and France.

*Mr. B
of Ke
Lord S
of Kinn
Mr. Full*

VII. After Hugh Watson, the most noted improver of Aberdeen Polls was William McCombie of Tillyfour, who was born in 1805 and died in 1880.

(1) His herd was founded in 1830 and dispersed in 1880.

(2) His success in the showyard has few parallels in the history of farm stock.

(3) In 1878 he won highest honors in Paris, France, competing against all breeds.

Sir George McPherson Grant

VIII. Early in the century Lord Panmure tried to improve the Aberdeen Polls by means of a Galloway cross, but the effort resulted in failure.

IX. Toward the middle of the century Short-horn bulls were extensively crossed on Aberdeen-Angus cows, the result being a very superior animal for the block.

(1) To so great an extent did this practice prevail at one time that fears were entertained for the preservation of the purity of the breed.

(2) The after crosses, however, did not prove so satisfactory, and the practice was abandoned.

X. Extension to other countries.

(1) Aberdeen-Angus cattle reached Ireland prior to 1843, and England somewhat later, and several good herds have been established in both these countries.

(2) They first reached the United States in 1873, where already there are probably more herds of this breed than in Scotland.

(3) They were first introduced into Canada in 1876, and several herds have been established in various parts of that country.

(4) They are also kept in considerable numbers in Canada, South America, New Zealand and several countries in Europe.

XI. Organizations established.

(1) The Polled Cattle Society was established in 1879, largely through the efforts of Sir George McPherson Grant.

(2) The American Aberdeen-Angus Breeders' Association was organized in 1883.

XII. The first volume of the "Polled Herd Book" was published in 1862.

(1) In the first four volumes Galloway cattle are registered along with the Aberdeen Polls.

(2) The first volume of the American Aberdeen-Angus Herd Book was published in 1886.

XIII. Distribution in the United States and Canada.

(1) Aberdeen-Angus cattle are now being reared in twenty-seven states and provinces.

(2) They are bred and owned by 728 persons.

(3) The more important centers for the breed are Iowa, Illinois, Missouri, Ohio and Indiana, and in the order named.

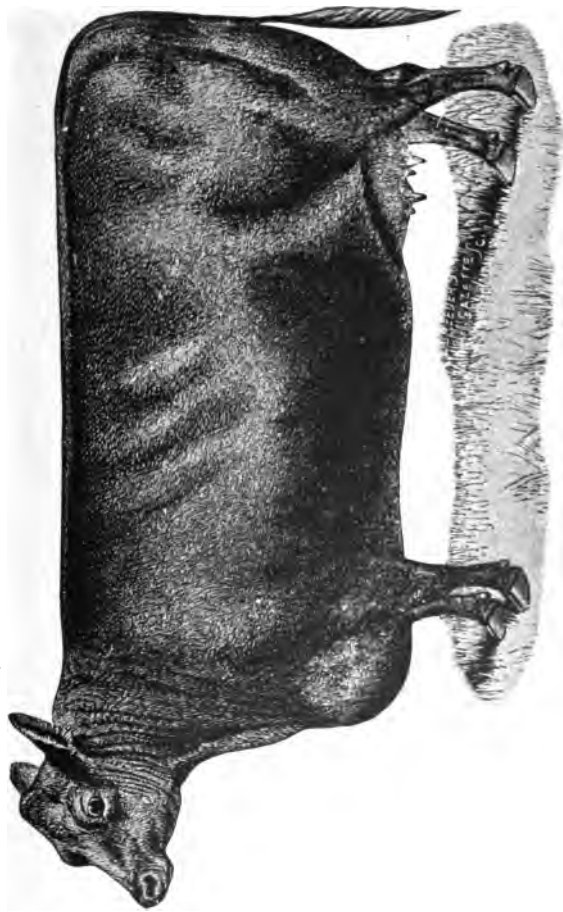


Fig. 7. Typical Aberdeen-Angus Cow

(53)

(4) About one-third of all the pure Aberdeen-Angus cattle in the United States are in Iowa and one-fourth in Illinois.

XIV. Registration in the United States.

(1) Nine volumes of the Aberdeen-Angus Herd Book have been issued.

(2) A total of 32,500 animals have been recorded, of which 13,744 are males and 18,756 are females.

LECTURE NO. 15.

ABERDEEN-ANGUS CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) The Polled Aberdeens were but little known outside of Scotland prior to the middle of the present century.

(2) Now they occupy a place in the public mind as beef producers that is probably not second to that given to Herefords.

(3) The rapid diffusion of the breed since its introduction into the United States augurs well for its future.

II. Adaptability.

(1) Aberdeen-Angus cattle are best adapted to temperate climates when shelter can be given them in winter.

(2) Although reared in considerable numbers on the open ranges of the west, they are probably better adapted to what may be termed semi-range conditions.

(3) They have highest adaptation for arable land, level or undulating, and rich in all kinds of food production, and where it is desired to produce meat of a high class.

(4) The absence of horns is favorable to feeding while running loose in sheds and yards, and also to transporting long distances by rail.

(5) In hardihood they are about medium.

III. Relative size.

(1) They follow closely upon the Shorthorns and Herefords, although they do not possess quite the same average size, but

(2) They weigh remarkably well in proportion to their size.

(3) With good feeding, cows at maturity will weigh from 1100 to 1500 pounds, and bulls 2000 to 2400 pounds.

IV. Early maturing qualities.

(1) Formerly they were slow in maturing, but in this respect they have been greatly improved.

(2) With good feeding they will mature for the block at the age of, say, thirty months.

V. Grazing qualities.

(1) In grazing qualities they are about average.

(2) Like the large bodied Shorthorns and Herefords they do not graze well on broken and rugged lands where the pastures are scant.

VI. Feeding qualities.

(1) Their feeding qualities are of the first order, as they stand confinement well and make an excellent use of the food given them.

(2) They are remarkable for their retention of symmetry of form while being fattened, as they rarely become patchy or disproportioned.

(3) During recent years, pure and high grade Aberdeen-Polls have won more prizes at the leading fat stock shows for the number of animals shown than have been won by any other breed.

VII. Quality of meat.

(1) In quality of meat they are probably ahead of the Shorthorns and Herefords, and are equal or nearly equal with the Galloway and West Highland breeds.

(2) As a rule the flesh is well mixed and contains a large proportion of compact, finely grained meat, and

(3) No other breed produces a higher percentage of dead meat in proportion to the live weight.

VIII. Milking qualities.

(1) Formerly they were possessed of good milking qualities, more especially that branch of the parent tree known as the crofters' cow.

(2) These qualities have been impaired, however, through the system of breeding and management adopted, save in some individuals and in a few families.

(3) The quality of the milk is first-class.

IX. Value in crossing and grading.

(1) Polled Aberdeens cross particularly well with Short-horn grades.

(2) They are also excellent for crossing upon common stocks in arable sections where quick feeding, absence of horns and a high quality of meat are desired in the progeny.

(3) A large percentage of the progeny are hornless and black or gray in color.

X. Breeding qualities.

(1) Their breeding qualities were formerly of a high order, as witnessed in "Auld Granny," owned by Hugh Watson, but

(2) To some extent they have been impaired through the artificial treatment to which they have been subjected, so that now they cannot be placed higher than good average.

XI. Weak points.

(1) As to properties, they do not appear to have any weaknesses which stand out markedly prominent.

(2) As to form, they are in some instances a little lacking in scale.

XII. Compared with Shorthorns.

(1) They are probably something ahead in quality of meat, and in suitability for shipping by rail.

(2) In adaptability, early maturity, grazing and feeding properties, utility in crossing and in breeding properties, they are about equal.

(3) In general popularity, size, and milking qualities they are as yet a little behind.

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LECTURE NO. 16.

ABERDEEN-ANGUS CATTLE—THEIR STANDARD POINTS.

I. The following is the scale of points adopted by the Aberdeen-Angus Breeders' Association in 1890:

FOR COWS.

	POINTS
(1) <i>Color</i> —Black. White is objectionable, except on underline behind the navel, and there only to a moderate extent	2
(2) <i>Head</i> —Forehead moderately broad, and slightly indented; tapering toward the nose; muzzle fine; nostrils wide and open; distance from eyes to nostrils of moderate length; eyes full, bright and expressive, indicative of good disposition; ears large, slightly rising upward, and well furnished with hair; poll, well defined and without any appearance of horns or scars; jaws, clean	10
(3) <i>Throat</i> —Clean, without any development of loose flesh underneath	3
(4) <i>Neck</i> —Of medium length, spreading out to meet the shoulders, with full neck vein	3
(5) <i>Shoulders</i> —Moderately oblique, well covered on blades and top; with vertebra or backbone slightly above the scapula or shoulder blades, which should be moderately broad	6
(6) <i>Chest</i> —Wide and deep; round and full just back of elbows	10
(7) <i>Brisket</i> —Deep and moderately projecting from between the legs, and proportionately covered with flesh and fat	4
(8) <i>Ribs</i> —Well sprung from backbone, arched and deep, neatly joined to the crops and loins	8
(9) <i>Back</i> —Broad and straight from crops to hooks; loins strong; hook bones moderate in width, not prominent, and well covered; rumps, long, full, level and rounded neatly into hindquarters	10

(10) <i>Hindquarters</i> —Deep and full; thighs thick and muscular, and in proportion with hindquarters; twist filled out well in its “seam” so as to form an even, wide plain between thighs	8
(11) <i>Tail</i> —Fine, coming neatly out of the body on a line with the back, and hanging at right angles to it	3
(12) <i>Udder</i> —Not fleshy, coming well forward in line with the body and well up behind; teats squarely placed, well apart and of good size	8
(13) <i>Underline</i> —Straight, as nearly as possible; flank deep and full	4
(14) <i>Legs</i> —Short, straight and squarely placed; hind legs slightly inclined forward below the hocks; forearm, muscular; bones, fine and clean	3
(15) <i>Flesh</i> —Even and without patchiness	3
(16) <i>Skin</i> —Of moderate thickness and mellow touch, abundantly covered with thick, soft hair. Much of the thriftiness, feeding properties and value of the animal depend upon this quality, which is of great weight in the grazier’s and butcher’s judgment. A good “touch” will compensate for some deficiencies of form. Nothing can compensate for a skin hard and stiff. In raising the skin from the body it should have a substantial, soft, flexible feeling, and when beneath the outspread hand it should move easily, as though resting on a soft, cellular substance, which, however, becomes firmer as the animal ripens. A thin, papery skin is objectionable, especially in a cold climate	10
(17) <i>General Appearance</i> —Elegant, well bred and feminine. The walk square, the step quick, and the head up	5
Perfection	<hr/> 100

FOR BULLS.

	POINTS
(1) <i>Color</i> —Same as for cows, but add, a white cod is most undesirable	3
(2) <i>Head</i> —Same as for cows, but substitute forehead broad, face slightly prominent for “forehead moderately broad and slightly indented,” and eyes mild, full and expressive, for “eyes, full, bright and expressive”	10
(3) <i>Throat</i> —Same as for cows	3
(4) <i>Neck</i> —Of medium length, muscular, with moderate crest (which increases with age) spreading out to meet the shoulders, with full neck veins	3

(5) <i>Shoulders</i> —Same as for cows	6
(6) <i>Chest</i> —Same as for cows	10
(7) <i>Brisket</i> —Same as for cows	4
(8) <i>Ribs</i> —Same as for cows	8
(9) <i>Back</i> —Same as for cows	10
(10) <i>Hindquarters</i> —Same as for cows	8
(11) <i>Tail</i> —Same as for cows	3
(12) <i>Underline</i> —Same as for cows	4
(13) <i>Legs</i> —Same as for cows	4
(14) <i>Flesh</i> —Same as for cows	4
(15) <i>Skin</i> —Same as for cows	10
(16) <i>General Appearance</i> —Same as for cows, but substitute masculine for feminine	10
Perfection	100

II. The following additional points are submitted:

(1) Head, not large, clean cut, handsome and well set on, and finer in the female.

(2) Muzzle, black in color.

(3) Cheeks, not heavy, but probably deeper than in some breeds.

(4) Body, fairly long, broad, deep, cylindrical, well rounded at the angles and evenly covered with smooth flesh.

(5) Breast, full, wide and deep and brisket broad.

(6) Forearm, broad and plump and tapering gracefully to the knee.

(7) Crops, full and level with the shoulder.

(8) Hind flanks, full, deep and thick.

(9) Buttock, moderately broad and slightly rounded at the sides.

(10) Milk veins, distinctly traced.

(11) Hoofs, semi-circular.

(12) Skin, stronger in the male than the female.

(13) The hair in the best animals has two growths, or lengths, the under one being short, thick and downy.

III. *Color*—The color most in favor is black without any variation.

(1) A shade of brown is not rejected, nor is some white about the udder, but white above the underline or on the legs will exclude from registry.

(2) Red or brindled is also inadmissible.

(3) Formerly they embraced a great variety of colors, as brindle, red, brown, silver colored yellow, and dark red and black stripes alternating.

IV. *General Appearance*—In general appearance they are low set and sturdy, fairly long in body and very smooth in outline.

V. Compared with Shorthorns.

(1) The Aberdeen-Angus are longer in body in proportion to the height, smoother and more cylindrical, less prominent at the angles and even shorter in the limbs.

(2) They are something finer in the muzzle and longer in the nose, a trifle longer in the neck and somewhat thicker in the hide.

(3) There are also the differences in horn and color previously mentioned.



(62)

Fig. 8. Typical Galloway Bull

LECTURE NO. 17.

GALLOWAY CATTLE—THEIR ORIGIN AND HISTORY.

I. Galloway cattle are so named from the province of Galloway, which now comprises the stewartry of Kirkcudbright and the shire of Wigtown.

(1) The principal pedigreed herds in Britain are found in Kirkcudbright, Dumfriesshire and Cumberland, where they have been bred pure further back than any authentic records carry us.

(2) Several writers of the sixteenth century speak in high terms of the excellence of the flesh of the cattle of the Galloway district.

II. The Galloways are certainly one of the purest, as well as one of the oldest, of the improved breeds.

(1) Some authorities hold to the opinion that they are descended from a wild aboriginal polled breed still represented at Chatellerault in Lanarkshire, Scotland.

(2) There has been no infusion of outside blood whatever within the period of their recorded history, as all efforts to improve the breed from an outside source have been unsuccessful.

(3) This is not inconsistent with the fact that horned cattle of other breeds have been bred simultaneously in the same districts.

(4) An unmistakable proof of the antiquity and purity of the breed is found in the entire absence of scurs in pure Galloways, and in the great power which they have to remove the horns when crossed upon other breeds.

III. The treatment to which they have been subjected, and the cold, damp climate in which they were originally reared, have contributed much to their proverbial ruggedness.

(1) They have there been frequently reared 1500 feet above the sea level, where grain will not ripen.

(2) The long wavy coat which protects them is probably owing to the dampness of the climate.

IV. During much of the last century and also the beginning of the present one, it was customary to drive Galloways in large numbers to the south-eastern counties of England to be finished for the London market.

(1) For many years, from 20,000 to 30,000 head were thus driven annually from the home of the Galloways.

(2) This trade ceased after the introduction of turnip husbandry into that part of Scotland.

V. Introduction into America.

(1) The first recorded Galloways were imported into Canada by Graham Bros. of Vaughan, Ont., in 1853, but

(2) Their dissemination in that country was owing chiefly to the untiring efforts of Thomas McCrae of Guelph, Ont., who began breeding them in 1861, and importing them from Scotland a few years subsequently.

(3) They were imported into Michigan about 1870, and somewhat later to Wisconsin and Missouri.

(4) They have also been introduced to some extent into other Anglo-Saxon countries.

VI. During the last century there were many Galloways of mixed colors, a point that is well brought out in crossing them on other breeds.

(1) Some were belted, some had white faces and a white mark along the back, others were brindled, drab or dun, red, and red and white.

(2) When crossed with an old established breed, one-half the calves will probably show a variety of colors.

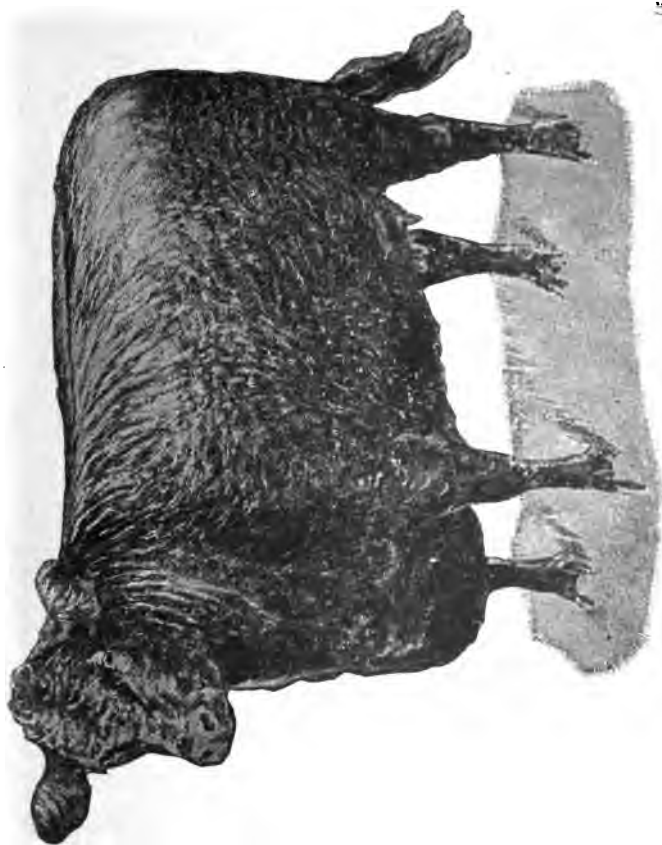
VII. Galloway Breeders' Associations

(1) The Galloway Cattle Society in Britain was established in 1877.

(2) The American Galloway Breeders' Association was established in 1882.

VIII. Registration in Britain.

(1) The first volume of the Galloway Herd Book, as distinguished from that of the Aberdeen-Angus was published in 1878.



(5)

Fig. 9. Typical Galloway Cow

(65)

(2) Previous to that time they had been registered in the same record as the Aberdeen-Angus breed.

(3) The Rev. John Gillespie, Mousewald Manse, Dumfries, has been the editor of the Galloway Herd Book since the adoption of separate registration.

IX. Registration in North America.

(1) Registration was commenced in Ontario in 1872, and up to 1874 was entirely confined to Canada.

(2) The first volume of the American Galloway Herd Book was published by the Agriculture and Arts Association of Ontario in 1883.

(3) In 1883, the interest of the last named association was purchased by the American Galloway Breeders' Association, and since that time the American registration of Galloways has been conducted in the United States.

X. Distribution in the United States and Canada.

(1) The more important centers of distribution in the United States are Missouri, Iowa, Illinois, Kansas and Minnesota and in the order named.

(2) A considerable number are found in the various provinces of Canada, and they are probably most numerous in Ontario and Nova Scotia.

XI. Registration in the United States.

(1) Nine volumes of the American Galloway Herd Book have been issued.

(2) A total of 14,491 animals have been recorded, of which 6,262 are males and 8,229 females, and 1,000 pedigrees await record.

LECTURE NO. 18.

GALLOWAY CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) Galloway cattle are probably not so popular as the Shorthorn, Hereford and Polled Aberdeen breeds, yet

(2) Among the leading beef breeds they are entitled to at least the fourth place.

(3) In the United States, and also to a less extent in Canada, they are gaining ground where cattle must needs rustle in inclement weather.

II. Adaptability.

(1) They are incomparably the hardiest of the British races, except the West Highland breed.

(2) Their long hair and thick mossy undercoat enables them to endure well the severities of weather arising from wet and cold, hence

(3) They are very well adapted to rugged regions and to the purposes of the range, both in the western states and the Canadian Northwest.

(4) They do better on spare diet than nearly all of the other beef breeds, as they have been much reared on rocky and thin land.

(5) This vigor of constitution enables them to stand well long journeys by road, rail or ship transit.

III. Relative size.

(1) In size they are considerably less than the Shorthorns and Herefords, and something less than the Aberdeen Polls, and possibly the Sussex, but

(2) They weigh remarkably well in proportion to the apparent size.

IV. Early maturing qualities.

(1) They do not mature quite so quickly as some of the beef breeds, owing to the way in which they have been reared, but

(2) When fed a forcing ration they are capable of maturing at an early age.

V. Grazing qualities.

(1) The grazing qualities of Galloways are of a high order.

(2) They are capable of "roughing it" on rugged pastures, and of making fair gains on these, and

(3) When put on rich pastures they finish quickly and in fine form.

VI. Feeding qualities.

(1) Galloways feed well, not only in the pure form, but when crossed upon certain other breeds, as the Shorthorn and West Highland.

(2) The largest specimens are not usually equal in feeding qualities to the short legged animals with small, fine bone.

(3) They take on flesh smoothly, being almost entirely free from patchiness.

VII. Quality of meat.

(1) Galloway beef has been noted for its fine quality in the London markets for nearly two centuries, where, during that time, it has commanded the highest market price.

(2) The fat is put on more internally than externally, and is finely intermixed with lean, the proportion of the latter being unusually large.

(3) The grain of the flesh is extremely delicate and it is rich in flavor.

VIII. Milking qualities.

(1) Galloways cannot lay claim to any superiority as a milking breed, since they have been bred mainly for the block, but

(2) Some individuals milk well and the milk of all is rich.

IX. Value in crossing and grading.

(1) For prepotency Galloways are almost unrivaled.

(2) When a bull of this race is crossed upon any of the various horned breeds, a large percentage of the produce will be black, and from 95 to 100 per cent without horns.

(3) A first cross from cows of various breeds has perplexed good judges to distinguish them from pure breeds.

X. Breeding qualities.

(1) The breeding qualities of Galloways are excellent, owing largely, doubtless, to freedom from confinement during much of the year.

(2) For a similar reason they breed to a good old age.

XI. Utility in the hides.

(1) The hides of Galloways are likely to be much used for robes and outer garments, owing to the length and beauty of the outer coat of hair.

(2) This feature is also likely to exercise an influence on the character of the sires chosen for breeding.

XII. Weak points.

(1) Their undeveloped milking qualities render them less well adapted to mixed husbandry, and

(2) Their lack of size renders them less suitable for rich arable sections.

XIII. Compared with Shorthorns.

(1) They are ahead of Shorthorns in hardihood, in adaptability to exposed situations, in grazing properties, in the high quality of the meat, in prepotency and in breeding qualities and in the value of the hides, but

(2) They are not equal to them in popularity, in general adaptability, in size, in feeding qualities and in milk production.

LECTURE NO. 19.

GALLOWAY CATTLE—THEIR STANDARD POINTS.

I. The following scale of points was drawn up by the Council of the Galloway Cattle Society of Great Britain in 1883:

- (1) *Color*—Black, with a brownish tinge.
- (2) *Head*—Short and wide, with broad forehead and wide nostrils; without the slightest symptoms of horns or scurs.
- (3) *Eyes*—Large and prominent.
- (4) *Ears*—Moderate in length and broad, pointing forward and upward, fringe of long hairs.
- (5) *Neck*—Moderate in length, clean and filling well into the shoulders; the top in a line with the back in the female, and in a male naturally rising with age.
- (6) *Body*—Deep, rounded and symmetrical.
- (7) *Shoulders*—Fine and straight, moderately wide above; coarse shoulder points and sharp or high shoulders are objectionable.
- (8) *Breast*—Full and deep.
- (9) *Back and Rump*—Straight.
- (10) *Ribs*—Deep and well sprung.
- (11) *Loin and Sirloin*—Well filled.
- (12) *Hook Bones*—Not prominent.
- (13) *Hindquarters*—Long, moderately wide and well filled.
- (14) *Flank*—Deep and full.
- (15) *Thighs*—Broad, straight and well let down to hock; rounded buttocks are very objectionable.
- (16) *Legs*—Short and clean, with fine bone.
- (17) *Tail*—Well set on and moderately thick.
- (18) *Skin*—Mellow and moderately thick.
- (19) *Hair*—Soft and wavy, with mossy undercoat; wiry or curly hair is very objectionable.

II. Compared with the scale of points given by Aiton in 1811, the following are the chief points of difference:

- (1) The muzzle is now broader.
- (2) More prominence is now given to the ear.
- (3) The hams are squarer.
- (4) The tail is finer, and
- (5) The hide some thinner.

III. The following list of undesirable points in Galloways was drawn up by James Biggar, Dalbeattie, Scotland:

- (1) Long, narrow head with high crown.
- (2) Narrow tapering muzzle.
- (3) Long, drooping ears.
- (4) Small, deep-set eyes.
- (5) Small, light neck.
- (6) Light, scraggy breast.
- (7) High, narrow shoulders.
- (8) Flatness behind shoulders.
- (9) Light fore or back ribs.
- (10) Square and prominent hook bones.
- (11) High or drooping rumps.
- (12) Weak or slack loins.
- (13) Rounded buttocks.
- (14) Fleshy double thighs.
- (15) Big, coarse bones.
- (16) Thick, stiff skin.
- (17) Hard, wiry or too curly hair.
- (18) Black, hard hair without soft undercoat.

IV. General appearance of Galloways.

- (1) They are low set, sturdy, robust, lively and spirited.
- (2) The muscles are strong, especially those concerned in traveling.
- (3) The coat is long, beautifully waved and handsome.

V. Compared with Shorthorns.

- (1) Galloways are less in size, more low set, and not quite so squarely built.
- (2) They are shorter in the head and polled, broader in the ear, more prominent in the arm and thigh, not quite so well filled in the crops, less prominent at the hooks and stronger at the tailhead, and
- (3) They are thicker in the hide, longer and more wavy in the coat and are black in color.

VI. Compared with Aberdeen-Angus.

- (1) Galloways are something less in size and not quite so long in body.
- (2) They are shorter in the head and less prominent and pointed at the poll.
- (3) They are a little more prominent at the angles of the body, not quite so cylindrical in shape, more prominent at the arm and thigh, a little stronger at the tailhead and not quite so well filled in the crops, and
- (4) They are a little thicker in the hide and longer and more wavy in the coat.

LECTURE NO. 20.

SUSSEX CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. Some obscurity hangs over the origin of this breed, but there are good reasons for believing that they are closely associated in ancestry with the Devons.

(1) Their breeding in England is largely confined to the counties of Sussex, Kent, Surrey and Hampshire, and

(2) It is only recently that they have been exported to other countries.

II. It is only within a comparatively limited period that the improvement of the breed has received marked attention.

(1) Formerly the animals of both sexes were used for plowing and other farm work, but now they are bred mainly for beef.

(2) Of late years they have scored well at the Smithfield Show at London, and also to some extent at the Fat Stock Show in Chicago.

(3) The calves are generally reared on the dams, usually getting only a part of the milk at first, and afterwards the whole of it.

(4) The Sussex Herd Book was established in England in 1860.

III. Sussex cattle in other countries.

(1) They were imported to the United States by Overton Lea of Nashville, Tenn., in 1884.

(2) In 1891 a small importation was made into Canada by the Ontario Experiment Station at Guelph, but some specimens of the breed had been brought into the country at an earlier period, although they were eventually taken to the United States.



Fig. 10. Group of Typical Sussex Cattle

IV. Distribution in the United States.

(1) It can scarcely be said that Sussex cattle have made marked progress since their introduction into the United States.

(2) A few herds have been established, chiefly in the Mississippi basin, but accessible information regarding them is very meager.

(3) They are now found in the states of Tennessee, Maine, Illinois, Indiana, Oklahoma, Texas, Kansas, Colorado and in Canada.

V. Registration in the United States.

(1) No Herd Record for Sussex cattle has yet been published in the United States, although

(2) Material for the same is accumulating.

LEADING CHARACTERISTICS.

I. Popularity and adaptability.

(1) Sussex cattle are popular only in limited areas owing in a considerable degree to the little effort made by breeders to place them before the outside public.

(2) Like the Shorthorns they are best adapted to localities rich in production and temperate in character.

II. Relative size.

(1) They are a heavy breed, fully equal to the Galloways in weight, but are rather larger than the Galloways in frame.

(2) They are possessed of several of the same properties as the Devons, to whom they bear a somewhat close resemblance, but they are considerably larger.

III. Early maturing and grazing qualities.

(1) In maturing they are a little behind some breeds, but in this respect they are rapidly improving.

(2) As grazers they are nearly, if not quite, equal to the Herefords.

IV. Feeding qualities and quality of the meat.

(1) They feed well, but in some instances are said to be a little over-nervous in temperament.

(2) The quality of the meat is very good, though some individuals are a little overstrong in bone.

V. Milking qualities.

(1) In milking qualities they are measurably deficient, hence they are not much used in the dairy.

(2) They are usually suckled by their own calves.

VI. Value in crossing and grading.

(1) They have not been greatly used for this purpose in the United States, hence

(2) But little on these points can be said with definiteness.

VII. Breeding qualities.

(1) These are good, since

(2) They have not been reared quite so artificially as some breeds.

VIII. Weak points.

(1) They have scarcely been tested enough in this country to know which these are, but

(2) They will include milking qualities that rank not high, and in many instances a little slowness in maturing.

IX. Compared with Shorthorns.

(1) They are not nearly equal to Shorthorns in popularity and in milking qualities, and

(2) They are not quite equal to them in all-round adaptability, in size, in early maturing and feeding qualities and in value in crossing and grading, but

(3) They are probably something ahead of them in the marbling of the meat and in breeding qualities.

PRINCIPAL POINTS.

In the absence of an authorized scale of points the following is submitted:

I. *Size*—Medium for the breed, inclining to large.

II. *Head*—Medium, though in some instances it inclines to large.

(1) Forehead, wide.

(2) Nose, medium in size and inclining a little to long.

(3) Muzzle, fairly broad and moist, and nostrils about average.

(4) Eyes, large, full, clear and of medium calmness.

(5) Horns, somewhat long but not coarse, fairly spreading, with a graceful forward curve in the male and forward and upward curve with some spread in the female.

III. *Neck*—Medium in length and cleanly made, but some animals of the breed have a little dewlap.

- (1) It should widen and deepen as in the Shorthorn, but
- (2) It is sometimes not quite so well filled in the neck vein.

IV. *Body*—Of the parallelogrammic type.

(1) Back, wide and straight throughout, with a flat loin, nearly as wide at the fore as at the hind end, and each side lying on a level with the chine.

- (2) Withers, moderately wide.
- (3) Shoulders, large and smooth.
- (4) Breast, wide and projecting well forward, as is also the brisket.

(5) Crops, full and heart girth good.

(6) Ribs, well sprung, giving a rounded appearance to the body, and narrow between the last rib and hip bone.

(7) Hooks, broad, with a wide space between and lying nearly as high as the chine.

(8) Hips, large and straight without, both at the side and rear.

(9) Thighs, flat on the outside and without incurvature behind.

(10) Rumps, long and flat and wide at the setting on of the tail.

(11) Buttock, wide and straight.

(12) Twist, deep and set low.

(13) Tail, perpendicularly hung.

V. *Legs*—Medium in length and neither fine nor coarse in bone.

VI. *Skin*—Only moderately thick and mellow and covered with soft hair.

VII. *Color*—Usually a solid red, both light and dark shades being common.

(1) These shades sometimes commingle to form a beautiful dapple bay.

(2) A little white is permissible about the udder and a few white hairs, nearly always single, except on the foretop and flank, are regarded most favorably.

VIII. *General Appearance*—Sussex cattle are smooth and symmetrical and neither massively built nor of the pony order.

IX. Compared with Shorthorns.

(1) The Sussex breed are not so large, something less in width and a little longer and stronger in limb.

(2) They have heads slightly stronger and longer, horns longer and more upturned, are scarcely so well filled in the neck vein and breast, and are not so wide nor massive though equally smooth.

(3) In color, they are red only.

LECTURE NO. 21.

WEST HIGHLAND CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. The West Highland cattle, sometimes called Kyloes, are no doubt descended from the aboriginal wild cattle of the country.

II. Although Argyleshire is their central home, they occupy the whole of the west and middle Highlands, and the western islands, being found in the greatest perfection in the larger Hebrides.

(1) One of the oldest herds is that of Poltalloch, founded in 1795.

(2) In many places to the southward they have displaced the deer formerly kept in the parks of noblemen.

III. Much attention has been given of late to the improvement of the breed, and with a success that is encouraging.

(1) The cows suckling calves are housed for a short time in winter, and some of the young cattle have sheds provided, but the principal portion winter in the open air.

(2) A Herd Book has recently been established for the breed, in Great Britain, largely through the influence of Lord Dunmore.

IV. West Highland cattle in other countries.

(1) Some have been imported to the United States, more especially the far West, and some to the Dominion of Canada, but

(2) As yet they have not obtained an extensive foothold outside of Great Britain.

V. They have a beautiful appearance when in finest bloom, which is during the last three months of the year, owing

- (1) To the sturdy character of the frame.
- (2) To the wild piercing glance of the eye, and
- (3) To the long shaggy coat which grows so abundantly, especially about the head and neck.

LEADING CHARACTERISTICS.

I. Popularity.

- (1) West Highland cattle have as yet but little popularity outside of Great Britain, since
- (2) They have been but little exported to other countries.

II. Adaptability.

- (1) Their incomparable hardihood and their fine grazing qualities adapt them to mountainous conditions, cold and bleak, where many other breeds could not subsist.
- (2) There should be a place for them on the mountain pastures of both the eastern and western states.

III. Relative size.

- (1) They are considerably the smallest of the distinctive beef breeds, but
- (2) They weigh well in proportion to their size, owing to their sturdiness of build.

IV. Early maturing qualities.

- (1) They are not good, owing to the conditions to which they are subjected, but
- (2) Under improved conditions of environment these would also improve.

V. Grazing qualities.

- (1) These are of a high order, as they are contented with the coarsest fare, and ultimately get fat where more tender breeds could scarcely exist.
- (2) They are well capable of enduring both damp and cold, and
- (3) Their staying powers are almost without limit, hence they can travel far in gathering food.
- (4) In winter they frequently eat heather and furze, and when taken south they fatten on pastures from which the best portions have been eaten.



(80)

Fig. 11. Typical West Highland Heifer

(5) They are generally finished on low land, and for this purpose they are in high favor in Scotland and England.

VI. Feeding qualities.

- (1) These are only medium, as they mature so slowly, and
 (2) Owing to their natural wildness, they take some time to become accustomed to confinement.

VII. Quality of meat.

(1) The meat is well laid on, is of the finest quality, and commands the highest price in the English markets.

(2) The proportion of the dressed meat to the live weight is also large.

VIII. Milking qualities.

(1) These are not good, since they are subjected to conditions unfavorable to milk production, but

(2) The quality of the milk is excellent.

IX. Value in crossing and grading.

(1) For either use there would seem to be no place for West Highland cattle, since

(2) Decreased hardihood in the progeny would make them less well adapted to mountain pastures, and want of size would make them less valuable than other breeds on lowland pastures, but

(3) When crossed upon by the Galloways, the progeny are excellent where the food conditions can be improved.

X. Breeding qualities.

(1) These are of the best, since

(2) Their environment is favorable to such breeding.

XI. Weak points.

(1) For cold, bleak conditions they seem to be completely furnished, but

(2) Want of size, scant milk production and shyness of disposition will hinder them from supplanting the large and more completely domesticated breeds.

XII. Compared with Shorthorns.

(1) They are considerably behind Shorthorns in popularity, general adaptability, size, maturing, feeding and milking qualities, and for crossing and grading, but

(2) They are considerably ahead of them in hardihood, grazing and breeding qualities and in the marbling of the meat.

PRINCIPAL POINTS.

In the absence of an authorized scale of points, the following is submitted:

I. *Size*—Medium, but it will naturally adjust itself to the attendant conditions of environment.

II. *Head*—The head is short and well proportioned, and has a profusion of long, shaggy and curly hair coming down below the eyes.

(1) Forehead, broad and jawbones to correspond.

(2) Eyes, prominent and possessed of a quick piercing glance.

(3) Nose, slightly turned up at the point.

(4) Horns, long, wide apart, curved and pointed and tipped with black.

(a) They should come out level with the head, and

(b) They should then incline forward and upward with a peculiar back set curve and wide sweep.

III. *Neck*—The neck should be medium in length and strong.

(1) It should be without dewlap, but oftentimes is not.

(2) On the crest of the bulls there is a mane of coarser hair.

IV. *Body*—The body is strong, deep, thick, muscular and compact.

(1) Back, straight, wide and well rounded from the shoulders backward.

(2) Shoulders, thick and immensely filled out downwards, from the point to the lower extremity of the forearm.

(3) Chest, wide and deep with much breadth between the forelegs.

(4) Ribs, well developed and fairly arched.

(5) Hind quarters, large development, square between the hip bones and the tail, and also at the buttock.

(6) Thighs, possessed of immense development.

(7) Tail, thick and strong, with a full bunch of hair hanging down toward the ground.

V. *Legs*—The legs are short, extremely muscular, are "well feathered," bone thick, broad and straight and hoofs strong.

VI. *Skin*—Rather thick, but mellow to the touch.

(1) The hair should be abundant, long, glossy, and possessed of a graceful wave.

(2) A curl in the hair is a decided fault.

VII. *Color*—The color varies, some animals being black, others red, dun, yellow and brindled or red and black.

(1) As a rule, the color is black, but fashion now inclines to yellow or light dun and brindle.

(2) A well marked brindle is said to be the favorite color for bulls.

VIII. *General Appearance*—In general appearance the West Highlander is sturdy and strong, and when seen on mountain or in timber pastures and in good condition he is weird, stately, grand.

IX. Compared with Shorthorns.

(1) They are much smaller, but sturdier, and more low set.

(2) The head is shorter, the horns much larger, and the eye livelier.

(3) The bones are stronger, and the arm and thigh much more fully developed, and

(4) They have a more picturesque appearance, owing largely to the long hair which covers them, more especially about the head and neck.

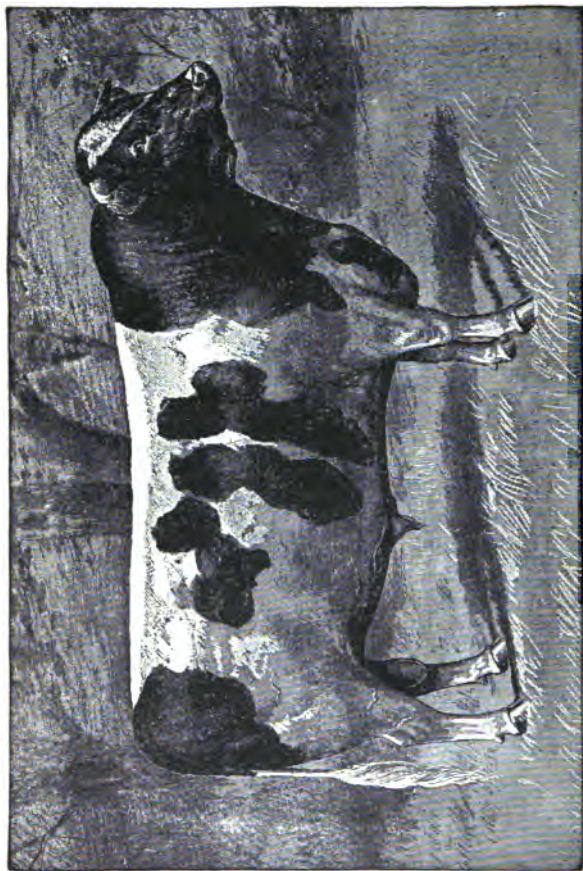


Fig. 12. Typical Holstein Bull

THE DAIRY BREEDS

LECTURE NO. 22.

HOLSTEIN-FRIESIAN CATTLE—THEIR ORIGIN AND HISTORY.

I. But little is known with certainty regarding the ultimate origin of this breed, but

(1) Judging from the few flashlight statements coming from a remote past they would seem to have been bred pure in much of the country eastward from the North sea for fully 2000 years.

(2) History makes it clear that since the Christian era, if not, indeed, before that time, cattle keeping has been the chief occupation of the rural population.

(3) There is some evidence to show that as early as the ninth century, Holland was famed for its dairy products.

(4) The historian, Motley, referring to this country, speaks of oxen 2000 pounds in weight, and of the immense production and exportation of butter and cheese, even in the seventeenth century.

II. Holland has several breeds or types of cattle, of which the Friesian, or Friesland, are the most numerous.

(1) The Friesian and North Holland cattle, resembling each other in all essentials and the progenitors of nearly all the Holstein-Friesian cattle in the United States, are by many supposed to have come originally from the duchy of Holstein.

(2) The sub-breeds. Oldenburgers, West Friesian, East Friesian, Gronnigen and Beemster are all supposed to have been derived from one parent stem.

(3) The differences are owing in part to differences in management, but more probably to differences in soil production.



(86)

Fig. 13. Typical Holstein Cow

III. Offshoots from Holland cattle.

(1) Among these are the Flanders breed of Belgium and France, the Oldenburg and Brittenburg breeds of Germany, and the Holmogorian breed of Russia.

(2) Cattle are also numerous in other parts of Europe which evidently possess the blood of the cattle of Holland in a greater or less degree.

IV. Importations into Britain.

(1) In the seventeenth and eighteenth centuries more or less of the blood of Dutch cattle was carried into England and Scotland and exercised some influence on the milking qualities of the old Teeswater and Ayrshire breeds.

(2) In England this influence extended northward from the Humber and over a considerable region.

V. These cattle have for centuries past been noted for their extraordinary dairy properties.

(1) The effort to further improve them would seem to have been constant and unceasing.

(2) The unusual succulence and productiveness of the pastures, which grow largely on reclaimed dyke lands, have facilitated such improvement.

VI. Care and management in Holland.

(1) They are carefully housed in clean, well lighted and comfortable stables in winter and are milked in the pastures from about May 1st to November 1st.

(2) When on pasture they are blanketed during inclement weather.

(3) Only a few of the choicest bulls are kept for breeding and about 20 per cent of the choicest females.

(4) The calves not reared are usually sold for veal and the cows for beef, after having produced five or six calves.

VII. Importations into the United States.

(1) The first cattle imported from Holland are supposed to have reached the Mohawk valley about 1621, and other sundry importations are thought to have been made subsequently by Dutch settlers.

(2) The first importation of which we have any definite knowledge was made to Cazenovia by the Holland Land Company in 1795.

(3) The first herd, the blood of which has been kept pure, was imported by W. W. Chenery of Belmont, Mass., in 1861.

(4) Importations did not become general or frequent until about 25 years ago.

VIII. Registration of Holstein-Friesian cattle.

(1) Nine volumes of the Holstein Herd Book were published by the Holstein Breeders' Association of America, the first of which appeared in 1872 and the last in 1885.

(2) Four volumes of the Dutch Friesian Herd Book were published by the Dutch Friesian Herd Book Association of America, the first of which appeared in 1880 and the last in 1885.

(3) These two associations were united in 1885 under the name of the "Holstein-Friesian Association of America."

(4) Public herd records are also now kept in Ontario, Holland, Belgium and Germany.

IX. Advanced registry.

(1) The Holstein-Friesian Association of America was the pioneer association in establishing a system of advanced registry based on structural form and actual performance.

(2) It was established in 1885, and largely through the efforts of Mr. S. Hoxie of Yorkville, N. Y., who was made the first superintendent.

(3) No animals are admitted under the age of two years.

(4) No bull will be admitted which has not evidenced superior quality in his progeny and that will not scale eighty points in the rigid standard set for advanced registry.

(5) A cow must have borne a calf and made certain milk and butter records required of cows of her form or year.

X. Distribution in the United States.

(1) Holstein-Friesian cattle are kept in every state in the Union.

(2) They are most numerous in New York, Pennsylvania, Ohio, Wisconsin, Illinois, Iowa, Massachusetts and Michigan, and probably in the order named.

XI. Registration in the United States.

(1) Since the consolidation of the associations named under Note VIII, sixteen volumes of the Holstein-Friesian Herd Book have been issued.

(2) Four volumes of the advanced registry were published separately, beginning with 1887, but the records commencing with Vol. XII of the Holstein Herd Book are now bound up with and appear in the several volumes of the same.

(3) There have been recorded in the records of the consolidated association, including Vol. XVI, 93,464 animals, of which 31,533 are males and 61,931 are females.

(4) The American branch association of the North Holland Herd Book has also recorded 396 males and 1125 females.

LECTURE NO. 23.

HOLSTEIN-FRIESIAN CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) The Holsteins deservedly rank very high among dairy cattle in America.

(2) Although they entered the field considerably later, they are only second to the Jerseys in point of numbers.

II. Adaptability.

(1) The large, capacious frame of the Holstein calls for environment where the land is level rather than broken, and rich in forage and grain production.

(2) When these conditions are present they may be kept with much advantage in providing milk for cities, for cheese factories and creameries and also for private dairies, in which the skimmilk can be turned to excellent account.

III. Relative size.

(1) The Holsteins are unquestionably the largest of the distinctive dairy breeds found in America.

(2) The frame is fully as large as that of the Brown Swiss and is not much behind that of the Shorthorn.

(3) The average live weight of cows may be put at 1200 pounds, while they vary from 1000 to 1500 pounds.

IV. Milking qualities.

(1) In the production of milk, quantity alone considered, the Holsteins are without a rival, but

(2) The milk does not average so high in butter fat as that of some breeds, although to this there are some exceptions.

(3) The milk is good for cheese or butter making, and either fresh or skimmed it is excellent for promoting quick development in young animals, since it is rich in constituents that go to form bone, muscle and fibrous tissue.

V. Early maturing qualities.

(1) Because of their large size they do not mature quite so quickly as some of the smaller breeds, but

(2) The heifers usually become milk producers at from twenty-four to thirty months.

VI. Grazing qualities.

(1) These are good, but not of the highest.

(2) The large frame forbids grazing them on lands much broken, or where they would have to travel far in gathering food.

(3) Soiling foods can be used with peculiar advantage in supplementing their summer pastures.

VII. Feeding qualities.

(1) They are of quiet disposition, grow rapidly, make large relative gains and attain good size when grown for meat production, but

(2) As they go on toward maturity they frequently lose in smoothness, although

(3) Up to the age of about eighteen months they should be capable of producing much meat relatively and of excellent quality.

(4) It is probably true that much of the discrimination shown against matured Holstein beef in this country, but not all of it, is grounded in prejudice.

VIII. Value in crossing and grading.

(1) Holsteins may be crossed upon common animals with much advantage when the object is to produce large dairy cows of free milk producing powers.

(2) When the object is to produce dual-purpose cattle they are not so well adapted to this end as some other breeds, but

(3) Where large quantities of skim milk are wanted for pork production, or where what is termed "baby beef" is reared, the Holstein cross may be eminently in order.

(4) Their marked prepotency is well brought out in the distinctive color markings which they impart.

IX. Breeding qualities.

(1) As breeders Holsteins stand high among the dairy breeds, since

(2) In-breeding has been carefully avoided, more especially in the parent stocks, hence in a great measure their freedom from disease, but

(3) Under feeding too forced and conditions too artificial, these good breeding properties will wane.

X. Weak points.

(1) The milk of this excellent milk producing breed does not average really high in butter fat.

(2) The average handling qualities are not so good as in some breeds, which would point to a relatively large consumption of food, and

(3) The quality of the matured meat does not rank among the very best.

LECTURE NO. 24.

HOLSTEIN-FRIESIAN CATTLE—THEIR STANDARD POINTS.

I. The following scale of points was drawn up by the Holstein-Friesian Association of America in 1885:

FOR BULLS.

	POINTS
(1) <i>Head</i> —Showing full vigor, elegant in contour	2
(2) <i>Forehead</i> —Broad between the eyes, dishing	2
(3) <i>Face</i> —Contour graceful, especially under the eye, medium in length, broad muzzle	2
(4) <i>Ear</i> —Of medium size, fine, covered with soft hair	1
(5) <i>Eyes</i> —Moderately large, full and bright	2
(6) <i>Horns</i> —Medium in size, fine in texture, short, oval, inclining forward	2
(7) <i>Neck</i> —Neatly joined to head and shoulders, nearly free from dewlap, of good length, proud in bearing	5
(8) <i>Shoulders</i> —Of medium height, well rounded and even over tops	4
(9) <i>Chest</i> —Low, deep and full	8
(10) <i>Crops</i> —Full and level with shoulders	4
(11) <i>Chine</i> —Straight, broadly developed and open	3
(12) <i>Barrel</i> —Well rounded, with large abdomen	6
(13) <i>Loins and Hips</i> —Broad, full, long and level	5
(14) <i>Rump</i> —High, long, broad and level	5
(15) <i>Thurl</i> —High, with great width	4
(16) <i>Quarters</i> —Long, straight behind, wide and full at sides	5
(17) <i>Flanks</i> —Deep and full	2
(18) <i>Legs</i> —Short, clean, tapering, with strong arm, in position firm, wide apart, feet of medium size, round, solid, and deep	6
(19) <i>Tail</i> —Reaching to hocks or below, large at setting, tapering finely to a full switch	2
(20) <i>Hair and Handling</i> —Fine, soft and mellow, skin of moderate thickness, secretions oily and of a rich brown or yellow color	10

(21) <i>Mammary Veins</i> —Long, large, branched, with extensions entering large orifices	10
(22) <i>Rudimentary Teats</i> —Not less than four, large, well spread	2
(23) <i>Escutcheon</i> —Large and fine development	8
Perfection	100

FOR COWS.

	POINTS
(1) <i>Head</i> —Decidedly feminine in appearance, comparatively long from eyes to base of horns, fine in contour	2
(2) <i>Forehead</i> —Broad between the eyes, dishing	2
(3) <i>Face</i> —Contour fine, especially under the eyes, showing facial veins, length medium, broad muzzle	2
(4) <i>Ears</i> —Of medium size, fine, covered with soft hair	1
(5) <i>Eyes</i> —Moderately full, large and mild	2
(6) <i>Horns</i> —Set moderately narrow at base, fine, oval, well bent, inclining forward	2
(7) <i>Neck</i> —Fine, nearly free from dewlap, neatly joined to head and shoulders, top line slightly curving, of good length, moderately thin, elegant in bearing	4
(8) <i>Shoulders</i> —Fine and even over tops, lower than hips, and moderately thick, deep and broad	3
(9) <i>Chest</i> —Low, deep and broad	6
(10) <i>Crops</i> —Full and level with shoulders	2
(11) <i>Chine</i> —Straight, broadly developed and open	3
(12) <i>Barrel</i> —Well rounded, with large abdomen	5
(13) <i>Loins and Hips</i> —Broad, full, long and level	5
(14) <i>Rump</i> —High, long, broad and level, with roomy pelvis	4
(15) <i>Thurl</i> —High, with great width	4
(16) <i>Quarters</i> —Long, straight behind, roomy in the twist, wide and full at sides	4
(17) <i>Flanks</i> —Fairly deep and full	2
(18) <i>Legs</i> —Short, clean, tapering with strong arm, in position firm, wide apart; feet of medium size, round, solid and deep	5
(19) <i>Tail</i> —Reaching to hocks or below, large at setting, tapering finely to a full switch	2
(20) <i>Hair and Handling</i> —Fine, soft and mellow, skin of moderate thickness, secretions oily and of a rich brown or yellow color	10

(21) <i>Mammary Veins</i> —Large, long, crooked, branched with extensions entering large orifices	10
(22) <i>Udder</i> —Capacious, flexible, well developed both in front and rear, teats well formed, wide apart, and of convenient size	12
(23) <i>Escutcheon</i> —Large and fine development	8
Perfection	<hr/> 100

II. General appearance.

(1) The large parallelogrammic rather than the wedge shaped frame of the Holstein conveys the idea of much capacity, and

(2) The long and slender head, neck and limbs, with the distinctiveness of the black and white markings, convey the idea of generations of careful breeding.

III. Compared with Shorthorns.

(1) Holsteins are usually as large, but not so massive in frame.

(2) They are something longer and less wide in head and neck and longer in limb.

(3) They are not so full in the neck vein, brisket and flank, and are lighter in arm and thigh, but

(4) They have the same squareness of development at the rear, except that they slant away a little more from the sacrum, and

(5) They have a more accentuated development of milk veins.

LECTURE NO. 25.

DUTCH BELTED CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

I. The Dutch Belted cattle originated in Holland prior to the seventeenth century.

(1) They are the outcome of scientific breeding and selection carried on through long generations.

(2) From the outset they have been chiefly if not entirely controlled by the nobility of Holland.

II. Origin of the name.

(1) They are so named from the white belt or band which encircles the barrel of every animal of the breed.

(2) The original Dutch name is "Lakenfield cattle," from "Laken, a shee: to be wound around the body of the animal."

III. Distribution in other countries.

(1) They are not found in many countries outside of Holland, owing

(2) To the decimation of the herds by contending armies and to the disinclination of the owners to part with them.

IV. Importation into the United States.

(1) The first importation definitely traced was made by D. H. Haight, Goshen, Orange county, New York, about 1838, but

(2) It is thought that early settlers had brought some specimens to that county at an earlier date.

(3) Importations have been infrequent, owing to the difficulty in securing the animals.

(4) A large proportion of the best specimens now in the United States trace to the herds of D. H. Haight, mentioned in Note (1), J. A. Holbert, Goshen, New York, and J. H. Knight, Monroe, New York.

V. Organizations.

(1) It is only during recent decades that Dutch Belted cattle have been registered in Europe or America.

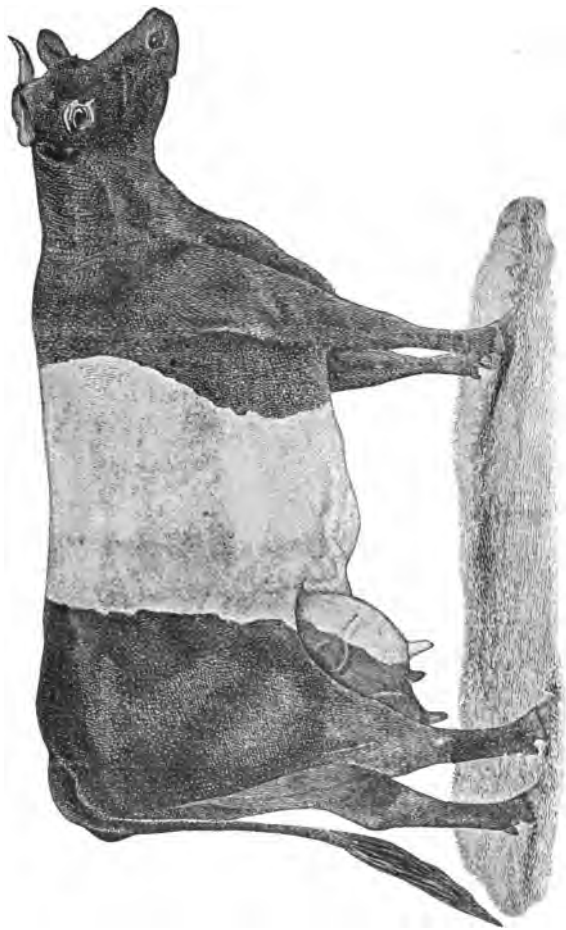


Fig. 14. Typical Dutch Belted Cow

(2) The Dutch Belted Cattle Association was organized in New York city in 1886.

VI. Distribution in North America.

(1) Dutch Belted cattle are now kept in twenty-six states of the Union, in Mexico and in Canada.

(2) They are most numerous kept in New York, Massachusetts, Pennsylvania and Ohio, and in the order given.

VII. Registration in the United States.

(1) Five volumes of the Dutch Belted Herd Book have been issued.

(2) There have been recorded 1250 animals, of which 367 are males and 883 females.

LEADING CHARACTERISTICS.

I. Popularity.

(1) Dutch Belted cattle have not as yet come greatly into favor with the many in Europe or America.

(2) This is probably more the result of circumstances connected with their origin and distribution than of any want of inherent excellence.

II. Adaptability.

(1) Dutch Belted cattle have much the same adaptation as Holsteins.

(2) They do best in tillable areas where grazing is plentiful and where fodders can be grown in ample supply, as, for instance, in the Mississippi basin.

(3) While not delicate, they are not perhaps so well adapted to withstand rigors of climate as some dairy breeds, hence their movement in this country has been southward rather than northward.

III. Relative size.

(1) They are somewhat less in size than the average Holstein and are a little ahead of the Ayrshire and Guernsey.

(2) The average weight of the cows has been put at 1000 to 1200 pounds and of the bulls at about 1800 pounds, or a little more than that.

IV. Milking qualities.

(1) These are excellent, but their utmost capacity in milk production does not appear to have been heretofore tested, as in the case of the Holsteins.

(2) The average in milk production, however, would probably be very similar, as also the character of the milk and the uses to which it is adapted (see Page 89).

V. Early maturing qualities.

(1) They are average in this respect.

(2) Like the Holsteins they come into milk at from twenty-four to thirty months, but continue to develop for at least two years subsequently.

VI. Grazing qualities.

(1) These are much the same as with the Holsteins, that is to say, they need good grazing lands rich in production and that do not involve climbing on the part of the animals grazing them.

(2) Their grazing properties do not appear to have been much tested in northerly latitudes and in exposed situations.

VII. Feeding qualities.

(1) As in the case of the Holstein they feed well up to the age of one to two years and they grow quickly.

(2) Up to the age mentioned, the killing qualities are good, but not so good relatively, subsequently, owing to more accentuated development in the dairy form.

VIII. Value in crossing and grading.

(1) Their marked prepotency is shown in the reproduction of the band or belt around the body when they are crossed upon common animals.

(2) Such crosses should prove beneficial where the chief object sought is improvement in dairy qualities.

IX. Breeding qualities.

(1) These are average, but not probably of the highest type, although

(2) When properly managed they are sufficiently reproductive.

X. Weak points.

(1) By inheritance they stand on the borderland of undue refinement, hence

(2) They have probably not the same all-round vigor of some breeds.

XI. Compared with Holsteins.

(1) They are not as yet so generally popular as the Holsteins, nor are they quite equal to them in size or vigor.

(2) In all the other essential characteristics the two breeds are very similar.

STANDARD POINTS.

I. The following scale of points was adopted by the Dutch Belted Cattle Association of America:

FOR COWS.

	POINTS
(1) <i>Body</i> —Color, black, with a clearly defined continuous white belt. The belt to be of medium width, beginning behind the shoulder and extending nearly to the hips	8
(2) <i>Head</i> —Comparatively long and somewhat dish-ing; broad between the eyes; poll prominent; muzzle fine; dark tongue	6
(3) <i>Eyes</i> —Black, full and mild; horns long com-pared with their diameter	4
(4) <i>Neck</i> —Fine and moderately thin and should harmonize in symmetry with the head and shoulders	6
(5) <i>Shoulders</i> —Fine at the top, becoming deep and broad as they extend backward and downward, with a low chest	4
(6) <i>Barrel</i> —Large and deep, with well developed abdomen, ribs well rounded and free from fat	10
(7) <i>Hips</i> —Broad, and chine level with full loin	10
(8) <i>Rump</i> —High, long and broad	6
(9) <i>Hindquarters</i> —Long and deep, rear line in-curving; tail, long, slim, tapering to a full switch	8
(10) <i>Legs</i> —Short, clean, standing well apart	3
(11) <i>Udder</i> —Large, well developed front and rear; teats of convenient size and wide apart; mam-mary veins large, long and crooked, entering large orifices	20
(12) <i>Escutcheon</i> —	2
(13) <i>Hair</i> —Fine and soft; skin of moderate thick-ness and of a rich dark or yellow color	3
(14) <i>Quiet disposition, and free from fat</i>	4
(15) <i>General condition and apparent constitution</i>	6
Perfection	100

FOR BULLS.

II. For males the scale should be the same as for females, except that

(1) No (11) should be omitted and the bull credited 10 points for size and wide spread, and placing of rudimentary teats, and

(2) Five points additional should be allowed for development of shoulder and five for perfection of belt.

III. General appearance.

(1) Dutch Belted cattle are a handsome breed because of their symmetry of form, their clean cut head, neck and limbs and the striking character of their color markings.

IV. Compared with Holsteins.

(1) The all-round development is something less with Dutch Belted cattle.

(2) They are a little finer at the muzzle and a trifle more prominent at the poll, the horns are wider spread and more uniformly tipped upward at the points, they are something more incurved at the rear and the tendencies to refinement of form are stronger than with the Holsteins.

(3) There are also the differences in color markings.

LECTURE NO. 26.

AYRSHIRE CATTLE—THEIR ORIGIN AND HISTORY.

I. The origin of the Ayrshire breed of cattle is involved in much obscurity, but it is generally supposed that they are made up largely of the blood of the Holderness, Dutch, Alderney, Kerry and West Highland breeds, engrafted upon the native stocks of the country during the eighteenth century.

(1) No particular individuals stand out prominently as improvers of the breed.

(2) Their chief excellences are supposed to have arisen from the peculiar circumstances of climate and soil and from the situation of several of the western counties of Scotland.

(3) Much attention was drawn to the breed toward the close of the last century by exhibitions gotten up for the purpose of improving it, and

(4) During the first half of the present century, the development of the wedge shape and hindquarters was much improved and the udder was brought to its present beautifully symmetrical proportions.

✓ II. Ayrshires are so named from the county of Ayr, where the breed originated, and which is still its principal center.

(1) They were at one time frequently spoken of as Dunlop cattle from a family of that name who had given considerable attention to breeding them in the eighteenth century.

(2) They now form the only class of dairy stock in the counties of Ayr, Wigtown, Bute, Argyle, Dumfries, Kirkcudbright and Perth.

(3) They also exist numerously in other counties of Scotland and in England.

III. Their mixed ancestry is indicated in the following resemblances:

(1) The wide and deep hindquarter points to Shorthorn blood in the ancestry.

(2) The fine skin to Alderney blood.



(102)

Fig. 15. Typical Ayrshire Bull

(3) The general outline and high milking qualities are akin to those of the Holsteins.

(4) Their ability to give milk from sparse pastures points to Kerry relationship, and

(5) Their natural shyness of disposition with certain horn and hair resemblances indicate West Highland kinship.

(6) This view of their mixed origin is strengthened by the numerous instances of atavic transmission found in some herds.

IV. Distribution in other countries.

(1) They have obtained a fair footing in Finland, pure or crossed on native stocks, and are numerous in Sweden and Norway.

(2) In New Zealand they stand next to the Devons in point of numbers.

(3) They have also been introduced into various other countries, including Japan, and in all of these they are distinguished for their dairy qualities.

V. Importations to the United States and Canada.

(1) Ayrshires were brought into Canada by Scotch settlers early in the century, and during the past two or three decades importations into that country from Scotland have been frequent.

(2) The first importation into the United States is thought to have been that made by Henry W. Hills of Windsor, Ct., in 1822.

(3) Recent importations into the United States have been less frequent than into Canada, hence the closer resemblance now observable between Scotch and Canadian Ayrshires.

VI. Ayrshire Breeders' Associations.

(1) The American Ayrshire Breeders' Association was established on its present basis in 1875, although the breeders had done organized work since 1859 in conjunction with "The Association of Breeders of Thoroughbred Neat Stock."

(2) The Ayrshire Importers' and Breeders' Association of Canada was established in 1870, and merged into the Dominion Ayrshire Breeders' Association in 1898.

(3) The Dominion Ayrshire Breeders' Association was established in 1889.

VII. Distribution in the United States and Canada.

(1) Ayrshires are more numerous in Ontario and Quebec, in the order named, than in any of the states of the Union.

(2) In the United States they are most numerous in New York, Massachusetts, Vermont and New Hampshire in the order named.

(3) They are kept in considerable numbers in the eastern states and to some extent in the states of the south which border on the Atlantic.

(4) But few Ayrshires are found west of the Mississippi river.

VIII. Registration in the United States and Canada.

(1) Twelve volumes of the American Ayrshire Record have been issued of the new series, or sixteen volumes in all.

(2) In the Canadian Records 22,152 animals have been recorded.

(3) In the American Ayrshire Records 22,061 animals have been recorded, of which 6798 are males and 15,263 females.



Fig. 16. Typical Ayrshire Cow

LECTURE NO. 27.

AYRSHIRE CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) Ayrshires are not popular over so wide an area as Holsteins, but they stand third among dairy breeds in point of numbers in the United States.

(2) They have been introduced into northerly rather than southerly latitudes and probably because of their hardihood.

II. Adaptability.

(1) Ayrshires are decidedly the hardiest of the dairy breeds imported into America, except the Kerry and the French Canadian breeds.

(2) This natural vigor combined with their activity fits them for areas where the seasons are somewhat rigorous and where some traveling is necessary in gathering food from the pastures.

(3) They are pre-eminently the cow for the dairy farmer where lands are broken and not particularly fertile, and yet they do equally well relatively under better conditions.

III. Relative size.

(1) The average weight of matured Ayrshire cows is put at 1000 pounds in the standard, but the tendency now is to breed them of a somewhat greater weight.

(2) They are therefore considerably behind Holsteins in weight, though a trifle ahead of Guernseys.

IV. Milking qualities.

(1) Ayrshires have not produced yields so phenomenal as the Holsteins, Guernseys, or Jerseys, but in average milk production they are not excelled if indeed equaled by any other breed.

(2) The milk is excellent for butter or cheese, hence these cows are equally useful for the cheese factory and the creamery.

(3) Like the milk of the Holstein it is admirably adapted to calf-rearing in the new or the skimmed form.

(4) It is also claimed that because of even quality and well balanced constituents it is growing in favor as a food for children in cities and towns. *Since 1880 the consumption of milk in London has increased from 1,000,000 to 1,500,000 gallons per week.*

V. Early maturing qualities.

- (1) These are not more than average, but
- (2) The heifers, as with those of the Holstein, come into milk at the age of from twenty-four to thirty months, and
- (3) Since Ayrshires have been less inbred and less artificially reared than some dairy breeds they are productive to a greater age.

VI. Grazing qualities.

- (1) Ayrshires will give more milk than Holsteins, Guernseys, or Jerseys when they have to travel over considerable areas when gleaned food.
- (2) Although well adapted to rich pasture lands, their active disposition and somewhat light development of form fit them admirably for grazing on abruptly undulating and hilly or broken lands.

VII. Feeding qualities.

- (1) These are much the same as with the Holsteins, with the difference that the Ayrshires are much less in size than the former.
- (2) When not in milk, like the Holsteins, they take on flesh better than the Guernsey, or Jersey.
- (3) The plump form and good hindquarters of the Ayrshire calves fit them for good meat production up to the age of nine to, say, eighteen months.

VIII. Value in crossing and grading.

- (1) Ayrshires when crossed upon the grades of certain other breeds and upon common cattle of good size produce a fine dairy animal.
- (2) Excellent results have been obtained by crossing Ayrshires upon Shorthorn and Holstein grades, but
- (3) Such crosses should not be made when the conditions of adaptation suited to the Ayrshires are not present.

IX. Breeding qualities.

- (1) The breeding qualities of Ayrshires are excellent.
- (2) This is largely the outcome of the absence of in-and-in breeding, of undue pampering, and of the extent to which they are grazed in the fields.

X. Weak points.

(1) Though generally quiet and docile, they are sometimes over-nervous and shy, and are possessed of that temperament that resents ill treatment.

(2) The teats are frequently a little small for the highest comfort to the milker.

XI. Compared with Holsteins.

(1) Ayrshires are not nearly equal to Holsteins in size, and are also behind them in general popularity, in milk production, quantity alone considered, and in marked docility, but

(2) They are ahead in ruggedness and all-round adaptability, evenness of milk production and quality of milk and in grazing and breeding qualities.

(3) In early maturity, in feeding qualities and in value in crossing and grading they are probably not far different.

LECTURE NO. 28.

AYRSHIRE CATTLE—THEIR STANDARD POINTS.

I. The following scale of points was adopted by the American Ayrshire Breeders' Association in 1889:

FOR COWS.

	POINTS
(1) <i>Head</i> —Short; forehead wide; nose, fine between the muzzle and the eyes; muzzle large; eyes, full and lively; horns wide set on, inclining upward	10
(2) <i>Neck</i> —Moderately long, and straight from the head to the top of the shoulder, free from loose skin on the under side, fine at its junction with the head, and enlarging symmetrically toward the shoulders	5
(3) <i>Forequarters</i> —Shoulders, sloping; withers, fine; chest, sufficiently broad and deep to insure constitution; brisket and whole forequarters light, the cow gradually increasing in depth and width backwards	5
(4) <i>Back</i> —Short and straight; spine, well defined, especially at the shoulders; short ribs, arched; the body deep at the flanks	10
(5) <i>Hindquarters</i> —Long, broad and straight, hook bones wide apart and not overlaid with fat; thighs, deep and broad; tail long, slender and set on a level with the back	8
(6) <i>Udder</i> —Capacious and not fleshy, hind part broad and firmly attached to the body, the sole nearly level and extending well forward; milk veins about udder and abdomen well developed; the teats from two to three inches in length, equal in thickness—the thickness being in proportion to the length—hanging perpendicularly; their distance apart at the sides should be equal to one-third of the length of the vessel, and across to one-half the breadth	30
(7) <i>Legs</i> —Short in proportion to size, the bones fine, the joints firm	3

(8) <i>Skin</i> —Yellow, soft and elastic and covered with soft, close, woolly hair	5
(9) <i>Color</i> —Red of any shade, brown or white or a mixture of these, each color being distinctly defined	3
(10) <i>Average Live Weight</i> —In full milk about 1000 pounds	8
(11) <i>General Appearance</i> —Including style and movement	10
(12) <i>Escutcheon</i> —Large and fine development	3
Perfection	<hr/> 100

FOR BULLS.

	POINTS
(1) <i>Head</i> —The head of the bull may be shorter than that of the cow, but the frontal bone should be broad, the muzzle good size, throat nearly free from hanging folds, eyes full; the horns should have an upward turn with sufficient size at the base to indicate strength of constitution	10
(2) <i>Neck</i> —Of medium length, somewhat arched and large in the muscles, which indicate power and strength	10
(3) <i>Forequarters</i> —Shoulders close to the body, without any hollow space behind; chest broad, brisket deep and well developed, but not too large	7
(4) <i>Back</i> —Short and straight; spine, sufficiently defined, but not in the same degree as in the cow; ribs, well sprung and body deep in the flanks	10
(5) <i>Hindquarters</i> —Long, broad and straight; hip bones wide apart; pelvis, long, broad and straight; tail, set on a level with the back; thighs, deep and broad	10
(6) <i>Scrotum</i> —Large, with well developed teats in front	7
(7) <i>Legs</i> —Short in proportion to size, joints firm; hind legs well apart and not to cross in walking	5
(8) <i>Skin</i> —Yellow, soft, elastic and of medium thickness	10
(9) <i>Color</i> —Red of any shade, brown or white or a mixture of these—each color being distinctly defined	3
(10) <i>Average Live Weight</i> —At maturity, about 1500 pounds	10

(11) <i>General Appearance</i> —Including style and movement	15
(12) <i>Escutcheon</i> —Large and fine development	3
Perfection	100

II. *General Appearance* —The Ayrshire is a sprightly looking animal of what may be termed the plain plebeian type, with straight top and rear lines and possessed of much relative development in the hindquarters.

III: Compared with Holsteins.

(1) In general outline of body the Ayrshire might almost be called a miniature Holstein, if the color markings were changed and the horns differently curved, but

(2) The head of the Ayrshire is probably a little stronger relatively, the horns are much more erect, the eye is not so restful, the play of the ear is more active, the skin is thinner and the teats are considerably smaller.

(3) The Ayrshire is also more active in movement.



(112)

Fig. 17. Typical Guernsey Bull

LECTURE NO. 29.

GUERNSEY CATTLE—THEIR ORIGIN AND HISTORY.

I. Guernsey cattle are so named from the island of Guernsey, one of the Channel island group off the northwest coast of France.

(1) Like the Jersey, they are supposed to be descended from the cattle of Brittany and Normandy, but more particularly from the latter.

(2) For many centuries they have been bred without admixture of alien blood.

(3) Through long years the importation of cattle to Guernsey from any quarter except for purposes of slaughter has been strictly prohibited.

II. The climate of the island of Guernsey is less genial than that of Jersey, hence something more of hardihood in development has been sought.

(1) The extreme length of Guernsey is ten miles, and it contains only 16,000 acres of land and rock surface.

(2) The growing of cattle and dairy products is the chief concern of the farmers.

(3) In 1896 the total number of cattle on the island was 5262, and yet many animals are exported every year.

III. Management of cattle in Guernsey.

(1) In the summer they are tethered in the fields, which partially explains their great docility.

(2) In winter, hay is supplemented with roots and meal and bran.

IV. Improvement of Guernseys.

(1) For more than a century the improvement of Guernseys has been carefully sought in their island home.

(2) The outcome of these efforts is increased size, earlier maturity and a more fully developed lacteal system.

V. The objects most sought by breeders.

(1) The animals are selected and bred with a view to utility rather than beauty, and for maximum butter production of a high quality, which explains

(2) The relatively plain appearance of Guernseys, the rich orange color of the skin and the superlative golden coloring of the milk and butter.

VI. Exportation to other countries.

(1) Guernseys have long been exported, more or less, to various countries, but chiefly to England and the United States.

(2) In several of the counties in the south of England they stand high in favor.

VII. Importations into the United States.

(1) Information on this head is as yet not plentiful.

(2) They have been numerous imported within the last two or three decades.

VIII. Organization in the interests of the breed.

(1) Associations have been formed in Guernsey, the United States and other countries to protect the interests of Guernseys.

(2) Two herd records have been established in Guernsey, one on the principle of selection and the other admitting all Guernseys on the island to registration.

(3) The American Guernsey Cattle Club was organized in 1897.

(4) It now offers prizes from time to time to the largest producing cows to encourage the breeders to keep private records and to reach out to higher production.

IX. Distribution in the United States and Canada.

(1) Guernseys are now being registered from some twenty-eight states in the Union and from nearly all the provinces of Canada.

(2) They exist most numerous in New England, New York, Pennsylvania, New Jersey and Wisconsin and least numerous in the Southwestern states.

X. Registration in the United States.

(1) The Guernsey herd register, first published in 1878, has been issued quarterly since 1895 under the name of the Guernsey Herd Register and Breeders' Journal.

(2) The total number of animals recorded is 18,053, of which 6132 are bulls and 11,921 are cows.



Fig. 18. Typical Guernsey Cow

(115)

LECTURE NO. 30.

GUERNSEY CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) Although there is no little resemblance between the characteristics of the Jerseys and Guernseys, the latter have never become so generally popular in this country.

(2) This may probably have arisen, in part at least, from their greater plainness in form, but more from the less effort put forth to place them before the public, as

(3) While breeds are yet young in a country, men have more to do with their popularity than even merit.

II. Adaptability.

(1) The Guernsey is better adapted to temperate and mild climates than to those that are rigorous, but good herds have done well in the climate of Quebec.

(2) Through ancestral inheritance rather than great size they are not well adapted to endure fatigue in gathering food on thin pastures and hilly lands.

(3) They are best adapted to the average arable farm where milk is wanted for the creamery or the private dairy and where attractive looking and high class butter is an important consideration.

(4) A limited number of Guernseys in a large dairy of average cows adds to the marketable quality of the butter through the rich color imparted.

III. Relative size.

(1) The Guernseys are about equal to the Ayrshires in size of frame, but they are probably a trifle behind them in average weight.

(2) Putting the average weight of the matured Ayrshire cow at 1,050 pounds, the mature Guernsey would be about 1,000 pounds.

IV. Milking qualities.

(1) The Guernsey has deep and prolonged milking qualities, the average production of whole herds being high, and the relative cost of production is low.

(2) The milk is fully equal to that of the Jersey in butter fat, is even richer in color, and the average yield per cow is probably greater.

(3) It is relatively better adapted to making butter than cheese, though for cheese-making it is good also.

(4) The naturally rich color of the butter is unexcelled, so that when Guernsey milk is mixed with that from common cows and from certain dairy breeds, the color of the butter is proportionately improved.

V. Early maturing qualities.

(1) The Guernseys are only average in maturity, being a little behind the Jerseys probably in this respect.

(2) They usually come into milk something over the age of twenty-four months.

VI. Grazing qualities.

(1) For a breed of only moderate size, they are not by inheritance adapted to other than productive grazing and also easy of access.

(2) Like the Holstein and the Jersey they have special adaptation to the combined system of grazing and soiling.

VII. Feeding qualities.

(1) Their offspring grow to a larger size than the Jersey, and they are, on the whole, more in favor as meat producers, but they should be made ready for the block at an age considerably prior to maturity in order to obtain from them the greatest profit.

(2) The cows discarded from the dairy have some capacity for meat making.

VIII. Value in crossing and grading.

(1) Guernseys are especially valuable for crossing on cows of mixed breeding to produce milkers of fair size and hardihood and that will give a good fair quantity of high class milk for butter making.

(2) Any favorable influence on the progeny as meat producers should not be too highly prized, as certain other breeds exercise a much higher influence in this respect.

IX. Breeding qualities.

(1) These are at least average, but

(2) As with all other breeds, they improve or decrease according as they are subjected to wise or unwise management in breeding, feeding or environment.

X. Weak points.

- (1) These are not pronounced in any direction.
- (2) They are not so rugged as some breeds, but they are not delicate.

XI. Compared with Holsteins.

(1) The Guernseys have a decided lead in average richness of milk, are probably something ahead in easy keeping qualities and are better adapted for crossing where improvement in the character of the milk and butter product are both sought.

(2) The Holsteins lead as yet in the extent to which they prevail, are fully 200 pounds ahead in size, give more milk and are relatively better adapted for meat-making, either in the pure or graded form.

(3) In other essential characteristics, as early maturity, grazing and breeding qualities they are about equal.

LECTURE NO. 31.

GUERNSEY CATTLE—THEIR STANDARD POINTS.

I. The following is the scale of points adopted by the American Guernsey Cattle Club:

POINTS		COUNTS
	(1) <i>Quality of Milk.</i>	
	(a) Skin, deep yellow in ear, on end of bone of tail, at base of horn, on udder, teats and body generally	20
30—	(b) Skin loose, mellow, with fine, soft hair	10
	(2) <i>Quantity and Duration of Flow.</i>	
	(a) Escutcheon, wide on thighs, high and broad, with thigh ovals	10
	(b) Milk veins, long and prominent	6
	(c) Udder, full in front	6
	(d) Udder, full and well up behind	8
	(e) Udder, large but not fleshy	4
	(f) Udder, teats squarely placed	4
40—	(g) Udder, teats of good size	2
	(3) <i>Size and Substance.</i>	
	(a) Size, for the breed	5
	(b) Not too light bone	1
	(c) Barrel, round and deep at flank	4
	(d) Hips and loins, wide	2
	(e) Rump, long and broad	2
16—	(f) Thighs and withers, thin	2
	(4) <i>Symmetry.</i>	
	(a) Back, level to setting on of tail	3
	(b) Throat, clean with small dewlap	1
	(c) Legs, not too long, with hocks well apart in walking	2
	(d) Tail, long and thin	1
	(e) Horns, curved and not coarse	2
	(f) Head, rather long and fine, with quiet and gentle expression	3
14—	(g) General appearance	2
100—	Perfection	100
	(5) For bulls, deduct 20 counts for udder.	
	(6) For heifers, deduct 20 counts for udder.	

II. The above very neatly worded scale of points would seem to be defective.

(1) In the excessive number of counts allotted to the indications of milk production in the skin, udder, milk veins and escutcheon.

(2) In the meager allotment of counts for other essentials, especially in form, indicative of good milk production and also stamina, as head, neck, body capacity and width through the breast, and

(3) In want of comprehensiveness in detail.

III. Additional particulars not given in the above scale :

(1) Head, inclining to long and not coarse, with moderate dish.

(2) Muzzle, broad and white or buff in color and surrounded by a fillet of light short hair.

(3) Eyes, large, clear and mild.

(4) Horns, inclining to small, circling well forward and considerably upward, and yellow and waxy at the base.

(5) Ears, not large nor thick and thinly covered with hair.

(6) Neck, inclining to long, deep and thin.

(7) Forequarters, something less in development than the hindquarters, moderate width at the withers and wide through the heart.

(8) Breast, wide below, but not full.

(9) Barrel, capacious, increasingly so far downward and backward.

(10) Ribs, of but moderately rounded and deep spring and well defined.

(11) Excessive downward slant away from the sacrum and droop toward the tailhead are to be avoided, though both frequently characterize good animals.

(12) Thighs, inclining to broad and thin and to incurvature.

(13) Twist, open and placed high.

(14) Limbs, moderately fine.

(15) Skin, not thick, soft, pliable, unctuous.

(16) Hair, plentiful, soft and not long

(17) Prominence at the angles characterizes many excellent animals, but should not be carried too far.

(18) When in full milk there is an appearance of spareness of flesh.

(19) The indications of gentleness should be present in both look and movement.

(20) The color and color markings vary considerably.

(a) The colors include red, light lemon, orange and yellow fawn, sometimes solid but more commonly with white markings.

(b) The shading includes such hues as reddish yellow, darker than brown, and fawn dun, but never gray, as in the Jersey.

(c) The color markings are white and are distinct, and they are found sometimes on the body, but oftener on the face, flanks, legs and switch.

(d) Among the favorite colors are orange red, orange fawn and lemon fawn, with white markings.

IV. Bulls contrasted with cows.

(1) They are stronger and more masculine in form and limb.

(2) The head is shorter, wider and less dished, and the horns are stronger, shorter and less curved upward.

(3) The neck is shorter, thicker and more arched.

(4) The forequarters have more relative development and more width through the breast, the coupling is relatively not so long and the angular points less distinctly defined.

(5) The skin should be thicker and particularly loose and pliable before and around the scrotum and the embryo teats widely placed.

(6) The carriage and action are more pronounced.

V. *General Appearance*—The Guernsey has that plain attractiveness and evenness of balance in dairy development which conveys the idea of capacity for everyday work and her mild look speaks of a quiet and contented disposition.

VI. Compared with Holsteins.

(1) The Guernseys are considerably less in size and weight than the Holsteins and they are also more prominent at the angular points.

(2) They are not so long in the head, are less incurved at the horn, less straight in the back and at the rear, shorter, lighter and less square relatively in the hindquarter and thinner and more incurved at the thigh.

(3) They are somewhat thinner, more unctuous and high colored in the skin and there are the differences in color markings.



Fig. 19. Typical Jersey Bull

LECTURE NO. 32.

JERSEY CATTLE—THEIR ORIGIN AND HISTORY.

I. This excellent breed of dairy cattle originated in the island of Jersey, which is a dependency of Great Britain.

(1) The island is about eleven miles long and considerably less than that in width and contains 39,680 acres, of which about 25,000 acres are tillable.

(2) Dairy cattle and dairy products are the chief concern of the farmers.

II. It is generally believed that Jerseys are descended from the cattle of Brittany and Normandy on the adjacent coast.

(1) It has been claimed that they have been bred with little or no admixture of alien blood for a period of 500 years.

(2) Since 1789 the importation of other cattle into the island has been strictly prohibited except for purposes of slaughter.

III. Improvement of the breed in Jersey.

(1) For more than 100 years the breeders of Jerseys have steadily sought the improvement of the breed, more especially in prolonged milk giving and in milk rich in butter fat.

(2) To attain this end much care has been exercised in breeding and selection during all those years, and

(3) Along with these qualities they have secured much of beauty and utility in their cows.

IV. Management of cattle in Jersey.

(1) They are pastured all the year during the day by the tethering system.

(2) From May to October they are out night and day, except during the hottest portion of the day in midsummer.

(3) In winter they are housed at night and the grass pastures are liberally supplemented with hay and roots.

V. Importations to the United States and Canada.

(1) In 1850, John A. Taintor imported several Jerseys for a little club of gentlemen in Hartford, Ct., but it is probable that Jersey blood had reached the United States prior to that date.

(2) In 1851, an importation was made by Thos. Motley of Jamaica Plain, Mass.

(3) In 1868, S. S. Stephens of Montreal, Can., imported nine animals.

(4) Many of the descendants of these animals have become greatly distinguished as butter producers.

(5) From 1868 onward, importations became frequent, not only from Jersey, but from England.

VI. Exportation to other countries.

(1) The great demand for Jersey cattle came first from England.

(2) Because of their beauty they were much sought for to graze in the parks of noblemen.

(3) For a time the craze for solid colors and for beefy types wrought much injury to the dairy qualities of Jerseys in England.

(4) They are now found in many countries in both hemispheres, but the United States is pre-eminently their home.

VII. Competition at the World's Fair in Chicago in 1893.

(1) Twenty-five pure bred animals, of the Jersey, Guernsey and Shorthorn breeds respectively, were pitted against each other for fifteen days in the production of cheese and by-products, and for ninety days for the production of butter.

(2) In both instances the first awards went to the Jerseys which produced the most milk, cheese and butter respectively, of the highest quality and at the lowest cost, but

(3) In this magnificent showing the greater number of the eligible Jerseys that could be selected from should not be overlooked.

VIII. Organization to promote the interests of Jerseys.

(1) Associations have been formed to promote the interests of the breed in the United States and Canada, Jersey, England and other countries.

(2) The American Jersey Cattle Club was organized in 1868 with a membership of forty-three.



Fig. 20. Typical Jersey Cow
(125)

(3) About 1834, the Royal Jersey Agricultural Society drew up a scale of points as an aid to breeders and judges.

IX. Distribution of Jerseys in North America.

(1) Jerseys are kept in all parts of the United States and in all the provinces of Canada.

(2) They are most numerously kept in the Middle and Eastern states and are also kept in considerable numbers in the West and South.

X. Registration of Jerseys in the United States.

(1) There have been issued fifty volumes of the American Jersey Cattle Club Register, the first of which appeared in 1871.

(2) The total registration is 199,500, of which 55,500 are males and 144,000 females.

XI. Butter tests.

(1) Provision has been made for conducting butter tests with recorded animals and keeping a record of the same.

(2) The first volume of the book of butter tests, records 3955 such trials, carrying the record of the same up to August 1, 1898.

LECTURE NO. 33.

JERSEY CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) The Jersey is unquestionably the most popular breed of dairy cattle in America, if numbers are taken as the basis of judgment.

(2) It is probably true that Jerseys, excluding Holsteins, outnumber all the other dairy breeds combined.

(3) This great popularity is to some extent owing to the longer period they have been in the country and to the great enterprise shown in disseminating them, but it is chiefly owing to their intrinsic merit in the dairy.

II. Adaptability.

(1) The Jersey is *par excellence* the cow for the individual who keeps but one, because of her gentleness and her easy keeping and unexcelled cream-producing qualities.

(2) She has also marked adaptation for the dairy, where butter primarily is sought.

(3) Jerseys can be kept in cold climates, but are better adapted to mildly temperate regions, and they will thrive further south than some other dairy breeds.

(4) Although small in frame they should not be kept on sparse or rugged pastures, as they have not the staying powers of the Ayrshires, or Kerries.

III. Relative size.

(1) The Jersey is small and deer-like in form, the average weight in the matured cow being under rather than over 900 pounds.

(2) She is the smallest of the dairy breeds in America, save the French Canadian and the Kerry, and the system of breeding and selection practiced for many years would seem to have reduced rather than increased the size.

(3) In recent years a wise revolt against too small size and over-refinement of frame has set in among breeders in the Eastern states at least.

(4) As a result the average Jersey of the Eastern states is probably 50 to 100 pounds more than the figures given above in Note (1).

IV. Milking qualities.

(1) The Jersey is noted rather for the richness of her milk than for the quantity of the same, although she is notably persistent in milk production.

(2) In the production of butter fat she is without a peer and without a close rival, save in the Guernsey and French Canadian breeds.

(3) The fresh milk undiluted has in some instances been found too rich for successful calf-rearing.

(4) It is good for cheese-making also, but some other breeds are ahead of the Jersey in that respect, because of the greater quantities given.

V. Early maturing qualities.

(1) No other breed of dairy cattle matures more quickly.

(2) The heifers usually come into milk at the age of two years, and in some instances at an earlier age.

VI. Grazing qualities.

(1) Jerseys should be given rich pastures, but they will do fairly well on such as are of average production.

(2) It will be found more profitable with Jerseys than with some other breeds to supplement scant pasture production with soiling foods rather than to have them travel far in search of food.

VII. Feeding qualities.

(1) In easy keeping qualities Jerseys rank high, but

(2) They stand low as meat producers, even among dairy breeds, because of the extreme dairy form which characterizes them.

(3) The claim that the steers will make as rapid growth prior to maturity as those of the beef breeds is yet to be questioned, but

(4) Though they should, the discrimination in price against such meat is severe, however

(5) Jersey calves fed substantially on skimmilk and certain meal and fodder adjuncts up to the age of six to eight months, make good and profitable meat.

VIII. Value in crossing and grading.

(1) The marked prepotency of the Jersey when crossed upon common cattle, and even upon pure breeds of the other dairy breeds, almost invariably results in adding to the richness of the milk.

(2) When butter-making is the chief concern on the farm, Jersey blood may oftentimes be used with great advantage.

(3) Where skimmilk is an important factor, or where it is desired to grow good beef, such crosses should not be introduced.

IX. Breeding qualities.

(1) The breeding qualities of Jerseys naturally have been in some instances impaired by in-and-in breeding, and in others by subjecting them to conditions too artificial, but

(2) It would not be correct to say that as a race they are shy breeders.

X. Weak points.

(1) Chief among these are small size, lack of width through the heart, and in some instances a tendency to delicacy of constitution.

(2) Injudicious selection, in-and-in breeding, environment too artificial, and the search for extreme refinement and sparseness are largely responsible for these weaknesses.

XI. Compared with Holsteins.

(1) The Jerseys lead in all-round popularity, in richness of the milk, in early maturity and probably in easy keeping qualities.

(2) The Holsteins lead in all-round adaptation, in size, in quantity of milk produced, including value of skimmilk, in value for meat production and probably in average stamina.

(3) In grazing qualities, in value for crossing and grading and in breeding qualities the difference between the two breeds would not seem to be greatly marked.

XII. Compared with the Guernseys.

(1) The Jerseys are more refined in form and limb and are as yet more in favor with the general public.

(2) The Guernseys are considerably larger and stronger in frame, have larger teats, are even more characteristically yellow in the skin and are something ahead in meat production.

(3) In all other essential characteristics they are very similar.

LECTURE NO. 34.

JERSEY CATTLE—THEIR STANDARD POINTS.

I. The following scale of points was adopted by the American Jersey Cattle Club, 1885:

FOR COWS.

POINTS	COUNTS
(1) <i>Head</i> —Small and lean; face dished, broad between the eyes and narrow between the horns	2
(2) <i>Eyes</i> —Full and placid; horns, small, crumpled and amber colored	1
(3) <i>Neck</i> —Thin, rather long, with clean throat, and not heavy at the shoulders	8
(4) <i>Back</i> —Level to the setting on of tail	1
(5) <i>Loins</i> —Broad across	6
(6) <i>Barrel</i> —Long, hooped, broad and deep at the flank	10
(7) <i>Hips</i> —Wide apart; rump long	10
(8) <i>Legs</i> —Short	2
(9) <i>Tail</i> —Fine, reaching the hocks, with good switch	1
(10) <i>Hide</i> —Mellow, inside of ears yellow	5
(11) <i>Fore Udder</i> —Full in form and not fleshy	13
(12) <i>Hind Udder</i> —Full in form and well up behind	11
(13) <i>Teats</i> —Rather large, wide apart and squarely placed	10
(14) <i>Milk Veins</i> —Prominent	5
(15) <i>Disposition</i> —Quiet	5
(16) <i>General Appearance and Apparent Constitution</i>	10
Perfection	100
(17) In judging heifers, omit Nos. 11, 12 and 14.	

FOR BULLS.

- (18) The same scale of points shall be used in judging bulls, omitting Nos. 11, 12 and 14, and making due allowance for masculinity; but when bulls are exhibited with their progeny in a separate class, add 30 counts for progeny.

II. Additional particulars submitted, though not given in the above scale:

(1) The head should incline to long from the eye to the muzzle.

(2) Muzzle, black in color and encircled with a band of a light color.

(3) Eyes, intelligent, liquid and rimmed with black above and below.

(4) Horns, tipped with black.

(5) Ears, inclining to small and well fringed with hair and possessed of considerable erection and movement.

(6) Withers, fine and inclined to rise.

(7) Back, frequently swayed, more or less, the spinal column prominent at the chine and open spaced, the pelvic arch somewhat elevated, and the crupper prominent with a downward slope toward the outer hips.

(8) The junction of the neck is somewhat abrupt.

(9) Breast, wide in lower front, but not full, and brisket V-shaped.

(10) Chest, wide through the heart, but frequently it is not.

(11) Forearm, long but not full.

(12) Thighs, long, lean and incurved.

(13) Escutcheon, well developed.

(14) Udder, thinly haired and the veins covering it well defined.

(15) Milk veins, long, tortuous, branched, and they should enter the body through two or more large milk wells.

(16) Limbs, inclining to fine and placed well apart in front and behind.

(17) Skin, inclining to thin and distinctively yellow at the armpits and around the udder.

(18) Hair, abundant, sleek and fine.

(19) The appearance when in milk should be spare.

(20) The color may include gray fawn and white, yellow fawn and white, silver gray dun, cream-colored fawn and light silver and dark steel gray, solid colors with black points being formerly much in favor.

III. Bulls contrasted with cows.

(1) The head of the former is stronger, wider relatively, and shorter, and the horns are shorter, stronger and more upturned.

(2) The neck is thicker and is arched.

(3) The relative development of the forequarters is greater, more particularly at the withers, breast and through the heart.

(4) The barrel is relatively shorter, the hide thicker and the limbs stronger.

IV. *General Appearance* —In general outline the Jersey has a beautiful, deer-like form, a large

body supported by fine, clean limbs, a small head, small and crumpled horns, large, lustrous and liquid eyes, and, when in milk, a decided inclination to spareness in frame.

V. Compared with Holsteins.

(1) The Jerseys are much smaller, more refined, shorter in limb, more distinctively wedge-shaped, and as a rule not so straight in outline.

(2) They are not so long in the head and neck, are higher and narrower at the withers and pelvic arch and frequently have more of a downward sway in the back and droop toward the tailhead.

(3) They are less wide in the breast and chest, less wide and straight in the hips, thinner and more incurved in the thighs and smaller in the teats, and

(4) There are the differences in color.

VI. Compared with Ayrshires.

(1) The Ayrshires are not so refined in form and limb, are more plain in appearance, particularly about the head and neck, and are more than 100 pounds heavier in average weight.

(2) The head is a little stronger and not quite so much dished, the poll is wider and the horns are a little stronger and are upturned more or less, whereas in the Jersey they are crumpled.

(3) The back is straighter, the chest wider through the heart, the coupling a little shorter relatively, the hindquarter has more of relative development, being more straight above at the sides and at the rear, the teats are a little smaller and the legs are probably relatively shorter.

(4) They are more sprightly and active of movement, and

(5) There are the differences in color.

VII. Compared with Guernseys.

(1) The Guernseys are less clean cut and less handsome than the Jerseys, some coarser in the bone and larger in every way.

(2) They are something plainer in the head, less crumpled in the horn, deeper in the neck, a little wider at the withers, something wider through the heart, a little heavier in the hip, even more prominent at the angular points, a little longer in average length of limb and richer in the color of the skin.

(4) The formation of udder and average size of teat are even more perfect than in the Jersey.

(5) In other respects they are very similar, save in the color markings.

LECTURE NO. 35.

FRENCH CANADIAN CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

I. The French Canadian cattle are doubtless descended from the cattle of Brittany and Normandy.

(1) The early settlers of Quebec came largely from these provinces of France, and doubtless brought with them the stocks of cattle bred there.

(2) They were found in the new French colony as early as 1620.

II. Subsequently to 1620 the additional colonists who from time to time arrived from north-western France, added, by sundry importations, to the cattle previously introduced.

(1) These early importations were the only source from which French Canadian cattle derived their characteristics.

(2) No other cattle were introduced into the colony prior to 1776.

III. It is more than probable that the ancestry of French Canadian cattle is identical with that of the Channel island breeds.

(1) So close is the resemblance that it would not be easy to distinguish a French Canadian cow from a dark-colored Jersey.

(2) Their essential characteristics other than those which relate to form are very similar.

IV. Introduction of the English breeds.

(1) Subsequent to 1776, cattle of English origin were introduced to a somewhat limited extent, but



(134) Fig. 21. Typical French Canadian Cow

(2) Their introduction has been chiefly confined to the neighborhood of cities and to the limited rural districts occupied by Anglo-Saxon settlers.

(3) Their blood has been mingled only to a limited extent with that of the French Canadian cattle, hence

(4) Many of the latter have been bred pure in Quebec for more than 250 years.

V. The effects of environment.

(1) The long and cold winters of Quebec and the exposure to which these cattle have been subjected have begotten in them a hardihood that is simply unrivalled in dairy cattle.

(2) The coarse fare upon which they have been fed during much of the year has made them content with such food in the absence of meal, and

(3) The continuous handling to which they have been subjected has made them exceedingly docile.

VI. Registration of foundation animals.

(1) The rules relating to the registration of foundation animals were first established by the Quebec legislature.

(2) Before these foundation animals could be admitted to registry, they must be correct in form and of undoubted purity in descent.

(3) The foundation herd book was kept open until the end of 1896, that is to say, for a period of ten years.

VII. Organization.

(1) The French Canadian Cattle Breeders' Association was organized in 1895, chiefly through the efforts of Dr. J. A. Couture, D. V. S., who was elected "perpetual secretary" of the same.

(2) In September, 1895, the registration of French Canadian cattle was placed under the care of the said association.

VIII. Distribution in Canada and the United States.

(1) The French Canadian cattle are the prevailing breed in nearly all the counties of Quebec.

(2) They are most numerously kept in the pedigreed form in the counties of Berthier, Joliette, Drummond, Kamouraska and L'Islet.

(3) A number of herds are also found in the state of New York.

IX. Registration in Quebec.

- (1) Up to the end of 1899 there were recorded in the Foundation Herd Book, 922 bulls and 5,307 cows.
- (2) The whole number of animals now on record is 6,966.

LEADING CHARACTERISTICS.

I. Popularity.

(1) The popularity of French Canadian cattle is almost entirely confined to Quebec province and portions of states and provinces bordering on the same, but

(2) Now that they are being systematically improved, these robust little money makers will doubtless become favorites in other states and provinces.

II. Adaptability.

(1) Because of their inherent ruggedness they are adapted to climates where the winters are long and stern, as in Quebec, the maritime provinces of Canada, the New England states and the highlands of the northern Alleghenies.

(2) Because of their lightness of form they are eminently adapted to rugged pastures where much traveling must be done when grazing, and

(3) Because of their excellent milking and easy keeping qualities, they are unexcelled for dairy uses on lands that respond tardily to the efforts of the husbandman.

III. Relative size.

(1) French Canadian cattle are the smallest of the dairy breeds in America unless it be the Kerry.

(2) The cows weigh on an average 700 pounds.

IV. Milking qualities.

(1) They do not give so large a flow of milk as some breeds, but they milk with great persistence, and aggregate large yields in proportion to their size.

(2) When well supplied with food they should give from 5,000 to 6,000 pounds of milk a year.

(3) The milk is said to test on an average from 4 to 5 1-2 per cent, and

(4) They have much power relatively to produce milk on fodder supplemented by only a small addition of grain or even in its absence.

V. Early maturing qualities.

(1) These are not marked, but

(2) With more generous feeding they will improve.

(3) Even now heifers frequently come into milk at the age of thirty months and sometimes earlier.

VI. Grazing qualities.

- (1) These are of the very highest order.
- (2) They will gather food and give fair supplies of milk where the large breeds and the small and less robust breeds would completely fail.

VII. Feeding qualities.

- (1) They give an excellent return in milk for food consumed, but
- (2) They do not excel for meat production, since the dairy form is quite pronounced.
- (3) The calves, however, may be turned into profitable meat at an early age.

VIII. Value in crossing and grading.

- (1) The experience in crossing French Canadian cattle upon other breeds or grades has not been extensive, but
- (2) When improved milking qualities combined with hardihood are desired, they may be crossed with advantage on unimproved stock.

IX. Breeding qualities.

- (1) These are of a very high order.
- (2) The unpampered conditions to which they have been subjected for generations and the exercise which they must needs take in gathering food have proved eminently favorable to reproduction.

X. Weak points.

- (1) The chief of these are their small size for some conditions, and a little slowness in maturing, but
- (2) With improved conditions as to feed and environment they would doubtless soon improve in size and maturing qualities.

XI. Compared with Holsteins.

- (1) The French Canadian cattle are much less well known, very much less in size, mature more slowly and give a less quantity of milk, but
- (2) They are more rugged, are better grazers, easier feeders and give richer milk.

STANDARD POINTS.

I. The following is the scale of points adopted by the French Canadian Cattle Breeders' Association:

- (1) *Head*—Short; forehead wide; horns generally turned inward and sometimes a little upward, white in color with

black tips; muzzle surrounded with a gray or yellowish circle; ears neither very small nor very long, the inside of which is orange color and covered with thin, short hair.

(2) *Neck*—Thin.

(3) *Back*—Almost straight.

(4) *Chest*—Deep and almost in a line with the belly.

(5) *Belly*—Not bulky and forming a continuous line with the ribs and hips.

(6) *Loins*—Very broad.

(7) *Rump*—Broad and long.

(8) *Barrel*—Round, broad and deep at the flank.

(9) *Tail*—Thin, long, reaching very often to the fetlock.

(10) *Legs*—Short, fine and straight.

(11) *Skin*—Thin and mellow and covered with an abundance of hair.

(12) *Color for Females*—Solid black, black with a yellow stripe on the back and around the muzzle, brown with black points, brown brindle.

(13) *Color for Males*—Black, with or without the yellow stripes in order to get the color uniformly black within as short a time as possible.

II. The following additional points are submitted:

(1) Head, fine and well dished.

(2) Neck, joining the shoulders abruptly.

(3) Withers, inclining to fine.

(4) Spine, sharp and well defined.

(5) Shoulders, coming near in the upward slope.

(6) Chest, wide through the heart.

(7) Brisket, V-shaped.

(8) Barrel, capacious.

(9) Ribs, distinct and open spaced.

(10) Twist, open.

(11) Udder, large and well quartered.

(12) Milk veins, well defined and well forward and more or less branched.

III. *General Appearance*—French Canadian cattle are small in size and limb, relatively capacious in body, and inclining to spareness in form.

IV. Compared with Holsteins.

(1) French Canadian cattle are not much more than half as large, are shorter in limb, less square in quarter and more spare in development.

(2) They are more abrupt at the angular points, and

(3) There are the differences in color.

LECTURE NO. 36.

KERRY CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. The Kerry is the only purely native breed of cattle in Ireland that is possessed of much merit.

(1) From time immemorial they have been bred pure, but only in an aimless way until within a comparatively recent period.

(2) In size, shape and color they bear a close resemblance to the native cattle of Brittany.

II. Kerry cattle are so named from the county of Kerry, and until a comparatively recent period they were confined chiefly to the southwestern counties of Ireland.

(1) The unartificial conditions which surrounded them for centuries have made them the hardiest of the British dairy breeds.

(2) They have frequently been called the "poor man's cow" from the great service they have rendered to the cottager in rural districts.

(3) The extent to which they have been kept for this purpose measurably accounts for their characteristic docility.

III. Improvement of the breed.

(1) This was late in commencing, but has been rapid during recent years.

(2) Both in England and Ireland noblemen have zealously engaged in the work.

IV. Exportation of Kerries.

(1) Details with reference to this work are meager, but

(2) From their original home they have been introduced into many of the counties of Ireland.

(3) They are also numerous kept in several of the southwest counties of England, and



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Fig. 22. Typical Kerry Cow

(4) They have been exported to the United States and Canada, though as yet only in very limited numbers.

V. The Dexter cattle.

(1) The Dexter is a variety of cattle, the outcome of a cross between the Kerry and Devon breeds, according to some authorities, and of selection, according to others.

(2) Opinions differ as to the origin of the name.

(3) As distinguished from the Kerry they have a rounder and plumper body, shorter and rather thicker legs, a heavier and stronger head, and larger, straighter and coarser horns, and are better for beef, though not so good for milk, but

(4) These distinctions are being quickly obliterated through the indiscriminate blending of the two types.

LEADING CHARACTERISTICS.

I. Popularity.

(1) The popularity of Kerries can scarcely be said to have been tested in the United States, owing to the very limited numbers yet introduced.

(2) In Ireland they are the most popular breed of dairy cattle, and in some parts of England they are meeting with no little favor.

II. Adaptability.

(1) Kerry cattle have special adaptation to conditions where the pastures are much broken and not abundant, thus involving much traveling in seeking food.

(2) They should be admirably suited for the dairy in semi-mountainous areas in the United States, where hardihood and staying qualities are an important consideration.

III. Relative size.

(1) They are quite the smallest of the dairy breeds as yet imported into this country.

(2) In many instances the height does not exceed forty inches, and the average weight of matured cows is not more than 600 to 700 pounds.

IV. Milking qualities.

(1) The ability of this little creature to give milk under adverse climatic and pasture conditions is simply surprising.

(2) The quality of the milk is also rich, being not far behind that from Guernseys or Jerseys in butter fat, and the quantity is large for the size of the animal.

V. Early maturity.

(1) These cattle are slower in maturing than any of the dairy breeds yet introduced into the United States, owing

(2) To the unameliorated conditions under which they were kept in former years.

VI. Grazing qualities.

(1) These are of the very highest order because of their natural activity and hardihood.

(2) Kerries will prove profitable under conditions where nearly all dairy breeds would fail.

VII. Feeding qualities.

(1) High feeding qualities are claimed for Kerries by some British writers, but probably on insufficient grounds, although

(2) Kerry cows will fatten quickly when dry.

VIII. Value in crossing and grading.

(1) Their highest value in crossing and grading in this country would probably be found in mating Kerry sires with common animals kept in semi-mountainous regions, with a view to improving their milking qualities.

(2) On good grazing lands it would seem wise to maintain larger breeds.

IX. Breeding qualities.

(1) These are of the first order, owing

(2) To the unartificial nature of the conditions of their environment.

X. Weak points.

(1) The chief of these are their small size and slowness in maturing, but

(2) In both respects they are being improved.

XI. Compared with the Jerseys.

(1) They are not to be compared to the Jerseys in the general estimate of the public, in general adaptation or in the field that lies before them for crossing and grading, and they are not equal to them in size or maturing qualities, though nearly equal in the quantity of the milk produced, but

(2) They are far ahead of Jerseys in vigor of constitution, in ability to "rough it" under adverse conditions, and they are something ahead in easy keeping and in feeding qualities and in the ability to breed with unfailing regularity.

PRINCIPAL POINTS.

In the absence of an authorized scale of points in the United States the following is submitted:

I. *Size*—This should be regulated to a considerable degree by the nature of the environment.

II. *General Outline*—The body is essentially dairy in form, though not of the most pronounced type.

III. *Head*—Small, inclining to fine, tapering and well balanced in the different parts.

(1) Forehead, wide.

(2) Nose, fine and inclining to long.

(3) Muzzle, fine.

(4) Nostrils, placed high and somewhat open.

(5) Cheeks, lean.

(6) Eyes, mild, full and lively.

(7) Horns, rather thick at base, but gently tapering, with black tips, and coming gracefully forward and upward with considerable erection.

(8) Ears, small and fine and rather lively in movement.

IV. *Neck*—Straight, fine, inclining to deep, with medium abruptness at the neck vein.

V. *Back*—Straight from withers to tailhead.

(1) It is not wide at the withers, and is but moderately prominent at the chine, and

(2) It slopes down considerably away from the sacrum.

VI. *Forequarters*—A little less in development proportionately than the hindquarters.

(1) Shoulders, smooth and relatively deep, but not broad.

(2) Chest, wide.

(3) Breast, fairly deep and broad, but not full.

(4) Brisket, V-shaped.

(5) Forearm, inclining to full.

VII. *Barrel*—Capacious and deep, inclining to round more than to flat.

(1) Ribs, of medium spring and distinct when the cows are in milk.

(2) Crops, medium in fullness.

- (3) Fore flank, full.
- (4) Hind flank, not thick.
- (5) Heart girth, good for the size of the animal and nearly equal with the flank girth.
- (6) Underline, a little depressed.

VIII. *Hindquarters*—Deep and of medium development.

- (1) Hips, straight on the side.
- (2) Thighs, inclining to light.
- (3) Buttocks, a little incurved.
- (4) Pin bones, of but medium distance apart.
- (5) Twist, open and placed somewhat high.
- (6) Tail, long and fine.

IX. *Udder*—Between oblong and rounded in shape, capacious and evenly quartered, with teats of good size and placed well apart.

X. *Milk Veins*—Large and long; very prominent for so small an animal, branched.

XI. *Skin*—Fine, soft, unctuous and of a fine orange tint clearly visible at the muzzle, eyes and ears.

XII. *Legs*—Short, not coarse, and clean.

XIII. *Color*—The color most in favor is a rich black with, in some instances, a ridge of white along the back and a white streak under the belly, but some are black, brown, black and white and brown and white.

XIV. *General Appearance*—The Kerry is a neat little creature, almost if not quite as handsome as the Jersey, and she carries in her appearance that too infrequent combination of docility and sprightliness of movement.

XV. Compared with the Jersey.

(1) The Kerry is considerably smaller and is less prominent at the angles.

(2) She has a finer muzzle, stronger and more upturned horns, a straighter back and a slightly heavier frame for her size, and

(3) There are the differences in color.

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2.

THE DUAL-PURPOSE BREEDS

LECTURE NO. 37.

POLLED DURHAM CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. Polled Durhams originated in the United States, and more particularly in the state of Ohio.

(1) The development of this breed has all been accomplished within the last two or three decades, and

(2) It has been done by several breeders who for a time worked independently of one another, though essentially on the same lines.

(3) The efforts of Dr. W. W. Crane of Tippecanoe City, O., to popularize the breed have been abundant and unceasing.

II. The Polled Durhams have come from two different sources of ancestry.

(1) One branch has been established through the crossing of pure Shorthorn males upon selected common muley cows.

(2) The other is pure Shorthorn but hornless.

III. The following details relate to the establishment of the Polled Durhams upon a muley foundation:

(1) Good common muley cows were selected, of large form and good milking qualities.

(2) These were crossed by pure Shorthorn bulls, red in color.

(3) The female progeny only were reared for a time, and of these only such as were hornless.

(4) When possessed of 75 per cent of Shorthorn blood, and hornless, they were considered eligible for entry in the record, but the standard has been raised at certain times, as stated below.

IV. The following details relate to the establishment of the Polled Durhams upon a pure Shorthorn foundation.

(1) Recorded Shorthorn bulls that had never possessed horns were secured by different breeders, and these were bred to pure Shorthorn cows.

(2) Only such of the progeny were kept to breed from as were hornless.

V. The American Polled Durham Breeders' Association was organized in Chicago in 1889.

(1) Eight persons took the initiative in the work, all of whom had been engaged for some time previously in establishing the breed.

(2) The membership at the end of 1893 numbered forty, and included residents of several states.

VI. The following are the requirements for registration in the American Herd Book of Polled Durham cattle.

(1) Animals for registry must be at least one year old.

(2) They must be hornless.

(3) They must have the color and markings characteristic of the Shorthorn.

(4) They must not have less than 87 1-2 per cent of Shorthorn blood after 1893, 93 3-4 per cent after 1896, and 96 7-8 per cent after 1899, and the requisites previously mentioned.

(5) The produce of animals already on record will be recorded, provided they conform to the requirements mentioned in 1, 2 and 3, also

(6) The produce of any bull in the Polled Durham Herd Book, with the same requirements, and

(7) The produce of any cow in the Polled Durham registry, when by a bull recorded in the American Shorthorn Herd Book, and possessed of the same requirements.

VII. The leading Fair Associations were slow to give recognition to Polled Durham cattle in their prize lists, but

(1) At the World's Fair in Chicago in 1893, a full list of premiums was offered for Polled Durhams.

(2) The grand sweepstakes prize at the same fair open to all "general purpose" cattle, was won by the Polled Durhams.

VIII. The future of Polled Durhams.

(1) There would seem to be a bright future before this breed in the United States and also in certain other countries possessed of the requisite adaptation, since

(2) They meet the growing demand for cattle with all the essential characteristics of Shorthorns, and yet without horns.

(3) They are rich in the blood of several of the best strains of English and Scotch Shorthorns, and many of them have in addition the renovating influence of muley foundation blood.

IX. Distribution in the United States.

(1) Polled Durhams have been recorded from about twenty different states.

(2) The leading centers of distribution are Indiana, Illinois, Ohio, Texas, Michigan, Pennsylvania, Kentucky, Tennessee, Missouri, Iowa and Wisconsin, and probably in the order named.

(3) The first exportation of Polled Durhams was made to Argentina from the herd of J. H. Miller, Peru, Ind., in 1894.

X. Registration of Polled Durhams.

(1) But one volume of the American Polled Durham Herd Book has yet been issued, and it was published in 1894.

(2) There have been recorded 2100 animals, of which 850 are bulls and 1250 cows.

LEADING CHARACTERISTICS.

I. The characteristics of the Polled Durhams are essentially the same as those of the Shorthorns given in Lecture No. 9.

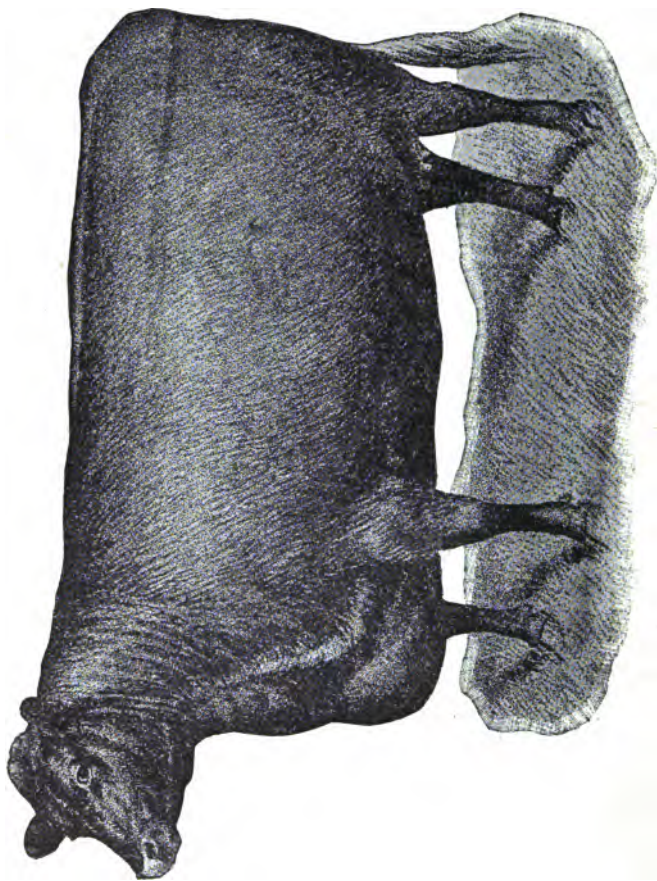
(1) They have the same large parallelogrammic frames, and

(2) Like the Shorthorns they are adapted to arable localities rich in food production.

II. They differ in the following essentials :

(1) More attention has been given to the development of their milking qualities, and

(2) They are more free from the weaknesses of some highly inbred Shorthorn families, as, for instance, shyness in breeding.



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Fig. 23. Typical Polled Durham Cow

PRINCIPAL POINTS.

I. No standard scale of points has as yet been drawn up for this breed, but

- (1) These are essentially the same as in the Shorthorn,
- (2) They are given in detail in the scale submitted for Shorthorns in Lecture No. 10.

II. They differ in the following essentials:

- (1) The Polled Durhams are hornless, and
- (2) They do not carry the beef form to quite the same extent as Shorthorns, since more attention has been given to the development of their milking qualities.



Fig. 24. Typical Brown Swiss Cow

LECTURE NO. 38.

BROWN SWISS CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. Switzerland has two distinct breeds of cattle, and several minor breeds, which are chiefly the offshoots of these two parent stems.

(1) One of these, the Berner spotted, a large and heavy breed, is found most numerous in the canton of Berne.

(2) The other, the Brown Schwytzer, originated in the canton of Schwytz, and it is now kept numerous in many of the cantons of Switzerland.

(3) Both breeds have been refined by many centuries of careful treatment and intelligent breeding.

II. The uniformity which characterizes the Brown Swiss cattle has been brought about by a long period of careful breeding.

(1) The government gives encouragement to careful breeding, and the cattle receive the best of care.

(2) Every animal of the breed exhibited at Paris, in 1878, was awarded a prize, but

(3) It can scarcely be said that marked uniformity in type characterizes the breed in the United States.

III. Distribution throughout Europe.

(1) The demand for Brown Swiss cattle in various European countries has been greater than the supply.

(2) They stand high in favor in nearly all countries of Europe to which they have been exported, but the greatest demand for them has come from Italy, Germany and Russia.

IV. Exportation to the United States.

(1) The first importation of Brown Swiss cattle was made into the United States in 1869, by Henry M. Clark of Belmont, Mass.

(2) Since that date many importations have been made, and more especially since 1882.

V. Organizations.

(1) The interests of the breed are protected by organization, both in Switzerland and the United States.

(2) The American Swiss Cattle Breeders' Association was formed in 1880.

VI. Distribution in the United States.

(1) Some animals of the breed are found in almost every state in the Union and there are a considerable number also in Mexico.

(2) In the east they are probably most numerous in Connecticut; in the middle states, Illinois; and in the west, Colorado.

VII. Registrations in the United States.

(1) Three volumes of the American Brown Swiss Record have been issued, the first of which appeared in 1882.

(2) There have been registered 2914 animals, of which 1207 are males and 1707 females.

LEADING CHARACTERISTICS.

I. Popularity.

(1) Brown Swiss cattle are probably the most popular cattle in Europe among continental breeds.

(2) They are also steadily coming into favor since their introduction into the United States and Canada.

(3) This result is unquestionably based on merit, since no effort has been made to boom them.

II. Adaptability.

(1) Brown Swiss cattle are best adapted to the arable farm where beef and milk are both sought for.

(2) Their strong, vigorous frames enable them to gather food with profit where some breeds not so heavy would prove less profitable.

III. Relative size.

(1) In size they are medium to large.

(a) The weight of the standard cow in Switzerland has been put at 1200 to 1300 pounds, but

(b) As the size is much affected by altitude, on the higher elevations the average weights would be considerably less.

IV. Milking qualities.

(1) Notwithstanding the strongly built frames of Brown Swiss cattle and the size of their hams, their milk-giving qualities average well.

(2) The milk is good for butter production, for condensing and for cheese-making, and it is excellent for calf-rearing.

(3) Their docility and gentleness, largely the outcome of kind treatment, still further commend them for the dairy.

V. Early maturing qualities.

(1) These are but medium.

(2) The breeders have avoided rather than sought undue precocity.

VI. Grazing qualities.

(1) These are of a high order, as they have been much grazed in their original home, but

(2) The larger types require richer and more level pastures than the smaller.

VII. Feeding qualities.

(1) The cows fatten readily when dry, and the steers grow to a good size at an early age when properly fed.

(2) The calves especially make a rapid growth, but

(3) The strength of the bone detracts somewhat from their feeding value.

VIII. Value in crossing and grading.

(1) Brown Swiss cattle are particularly valuable for crossing upon common animals more or less debilitated by injudicious breeding and over-artificial treatment, with a view to infusing renovating power.

(2) The cross-bred steers grow with great vigor and attain heavy weights at an early age, but they are not quite so smooth as the progeny of some of the distinctive beef breeds.

IX. Breeding qualities.

(1) These are excellent.

(2) They are the outcome of inheritance, of sensible management and of well balanced milking qualities.

(3) They do not breed quite so young as some breeds, but they continue to produce to a ripe old age.

X. Weak points.

(1) They would seem to have more of bone than is necessary, and they are somewhat rough at the shoulder points and sacrum.

(2) They are also less uniform in type than could be desired.

XI. Compared with Shorthorns.

(1) Shorthorns are much better known in the United States, are larger and smoother in frame, mature a little earlier and produce a more valuable carcass of beef.

(2) The Brown Swiss are more uniformly good milkers, are ahead in average ruggedness and have something of a lead over the Shorthorns in grazing and breeding qualities.

STANDARD POINTS.

I. The following scale of points was drawn up by the Brown Swiss Cattle Association in America :

	POINTS
(1) <i>Head</i> —Medium size and rather long	2
(2) <i>Face</i> —Dished, broad between the eyes and narrow between the horns	2
(3) <i>Ears</i> —Of a deep orange color within	1
(4) <i>Nose</i> —Black, square, and with the mouth surrounded by a light, meal colored band, tongue black	2
(5) <i>Eyes</i> —Full and placid	1
(6) <i>Horns</i> —Rather short, flattish and regularly set with black tips	5
(7) <i>Neck</i> —Straight, rather long and not too heavy at shoulders	4
(8) <i>Chest</i> —Broad and deep	4
(9) <i>Back</i> —Level to the setting on of tail and broad across the loin	6
(10) <i>Barrel-hooped</i> —Broad and deep at flank	8
(11) <i>Hips</i> —Wide apart, rump long and broad	4
(12) <i>Thighs</i> —Wide, with heavy quarters	4
(13) <i>Legs</i> —Short and straight with good hoofs	4
(14) <i>Tail</i> —Slender, pliable, not too long, with good switch	4
(15) <i>Hide</i> —Thin and movable	3
(16) <i>Color</i> —Shades from dark brown to light brown and at some seasons of the year gray; slight splashes of white near udder not objectionable; light stripe along back	6
(17) <i>Hair Between Horns</i> —Light, not reddish. (No points.)	
(18) <i>Fore Udder</i> —Full in form and carried far forward on the abdomen	10

(19) <i>Hind Udder</i> —Not too deeply hung, full in form and well up behind	10
(20) <i>Teats</i> —Rather large, set well apart and hanging straight down	5
(21) <i>Milk Veins</i> —Prominent	4
(22) <i>Escutcheon</i> —High and broad and full in thighs	7
(23) <i>Disposition</i> —Quiet and good-natured	4
	100
Perfection	100
(24) In judging bulls and heifers omit Nos. 18, 19 and 20, and for color they should be dark brown.	

II. Additional particulars submitted though not given in the above scale of points :

- (1) Poll, in many instances broad and always fringed with long and abundant hair.
- (2) Horns, fair amount of outward and upward curve.
- (3) Dewlap, usually present more or less.
- (4) Breast, of medium fullness.
- (5) Brisket, wide but inclining to the V shape.
- (6) Withers, possessed of medium width.
- (7) Back, usually prominent at the sacrum and tailhead and slanting away somewhat from sacrum downward toward outside of hips.
- (8) Tailhead, often strong.
- (9) Hide, thicker than in some breeds.

III. *General Appearance*—They are somewhat plainer in form, but evidence contentment, strength and capacity and there is an attractiveness about the uniformity of their markings.

IV. Compared with Shorthorns.

- (1) Brown Swiss cattle are not quite so large nor massive, but they are stronger in bone and limb.
- (2) They are somewhat longer in the head, larger and stronger in the horn, more fringed at the poll, less rounded in the breast and more V-shaped in the brisket.
- (3) They are more prominent at the shoulder points, sacrum and tailhead and have a thicker and richer colored hide.
- (4) There are also the differences in color markings.

LECTURE NO. 39.

RED POLLED CATTLE—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Red Polled cattle are the outcome of the amalgamation of two types which inhabited the counties of Norfolk and Suffolk respectively.

(1) The former of these, which was the smaller, was usually of a blood-red color, except the head, which was mottled, and it was possessed of fair milking and beef-making properties.

(2) The latter had more of the dairy form, and was originally a sort of mouse dun in color, but

(3) The colors in both were more or less broken far on into the present century, although a whole red continually grew into favor.

(4) Both types were polled and both have been freely inter-crossed for more than a century.

(5) They have been recognized as one breed since the year 1846.

II. Other breeds, as the Galloways, West Highland cattle and Shorthorns, have to some extent been used in crossing upon the Red Polls.

(1) A dark nose, which occasionally appears, would seem to indicate Galloway blood, but

(2) These crosses, introduced many years ago, have probably played an unimportant part in the improvement of the breed.

III. Improvement has been chiefly brought about by a most rigorous selection, breeding to a certain standard, improved care and liberal feeding.

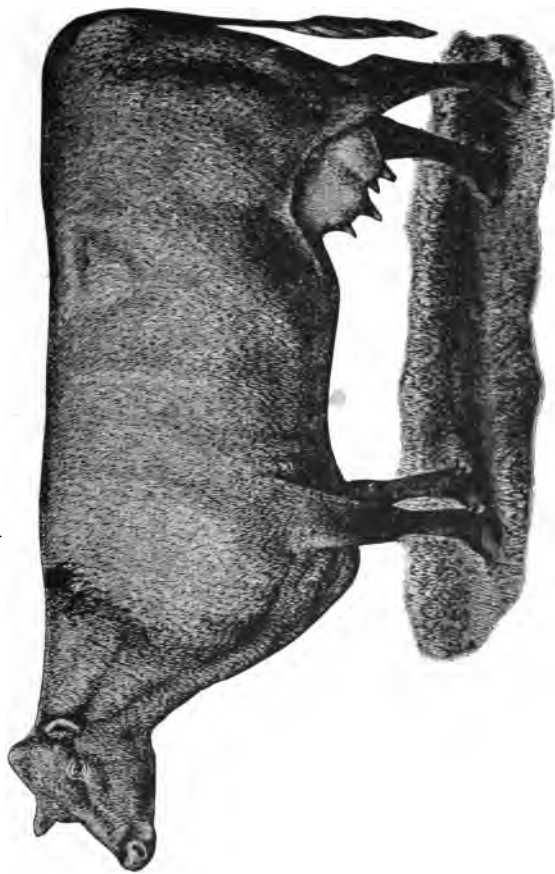


Fig. 25. Typical Red Poll Cow

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(1) It began early in the century, but was not rapid until the recognition of the Norfolk and Suffolk types as one and the same breed, in 1846, and

(2) It has been more general than local in character.

IV. In Britain the breeding of Red Polls is still largely confined to the counties of Norfolk and Suffolk.

(1) This is partly owing to the decimation of the breed by rinderpest several years ago.

(2) And partly to the comparatively recent period during which they have been prominently before the general public.

V. Extension to other countries.

(1) Polled cattle from Suffolk were introduced into Virginia, and probably some other states, fully two centuries ago, but

(2) The first regular importation of Red Polls into the United States in their improved form was made by Gilbert F. Tabor of Patterson, N. Y., in 1873.

(3) They have also been exported in considerable numbers to Ireland, Canada, Australia and New Zealand.

VI. Organizations.

(1) Associations have been formed both in England and America to promote the interests of the breed.

(2) The Red Polled Cattle Club of America was formed in 1883.

VII. Herd books.

(1) Sixteen volumes of the English Red Polled Herd Book have been published, the first of which appeared in 1874.

(2) Vol. 1 of the American Red Polled Herd Book, which appeared in 1887, is a condensation of the first six volumes of the English book and subsequent volumes are the same in their registrations.

(3) These books contain all the recorded Red Polls in the world, and

(4) In registering, a tribal letter is given to the cattle of each herd or neighborhood, for convenience in tracing tribal history.

VIII. Distribution of Red Polls in the United States.

(1) They are now registered from nearly all the states of the Union, and

(2) They are most numerous kept in the states of Illinois, Wisconsin, Michigan, Ohio, Kansas and Texas, and probably in the order named.

IX. Registration in the United States.

(1) This is not easily ascertained because of the dual nature of the registrations.

(2) There have been registered in England and America 21,172 animals, of which 6753 are bulls and 14,419 cows.

LEADING CHARACTERISTICS.

I. Popularity.

(1) If numbers in proportion to recent introduction are taken as the gauge of popularity, Red Polls are probably the most popular at present of the purely dual-purpose breeds in the United States, and

(2) That popularity would seem to be increasing in an accelerated ratio.

II. Adaptability.

(1) The medium-sized bodies and the inherited influences arising from environment adapt the Red Polls in an eminent degree to average arable conditions, and

(2) The same inheritance best adapts them to equable climates, although they will doubtless thrive in more severe climates as well as many other breeds.

III. Relative size.

(1) In size Red Polls stand about midway between the Shorthorns and the Devons.

(2) The average weight of mature cows would be about 1200 to 1250 pounds.

IV. Milking qualities.

(1) The Red Polls are more uniform and persistent in their milking qualities than many other breeds.

(2) The milk, like the breed itself, has a happy equilibrium in its qualities, but

(3) The teats are in some instances over-large.

V. Early maturing qualities.

(1) In early maturity they rank a little better than medium.

(2) As a breed they have not been forced, when young, to the injury of their breeding qualities.

VI. Grazing qualities.

- (1) These, too, are of the middle zone order.
- (2) They are most at home where food is plentiful, but can probably gather the same better than their heavier rivals.

VII. Feeding qualities.

(1) In no breed perhaps is the tendency so strong to produce abundantly when in milk and at the same time to fatten rapidly when dry.

(2) The steers, though of good fair size, fatten smoothly and cheaply, kill well and make an excellent quality of beef.

VIII. Value in crossing and grading.

(1) Red Polls are highly adapted for being crossed upon common stocks to improve them, both in form and utility.

(2) The progeny have a close resemblance to the Red Polls in form, appearance and qualities.

IX. Breeding qualities.

(1) These are at least medium.

(2) As with all other breeds they are much affected in this respect by artificial conditions.

X. Weak points.

(1) More uniformity would be desirable in breeding them, and

(2) A little more of heart girth and uniformity in size and setting of teats.

XI. Compared with Shorthorns.

(1) Red Polls are not nearly so well known or distributed as Shorthorns, and they are considerably less in size.

(2) They are more even in milk production and are better adapted to produce steers of the "pony" order.

(3) In other respects their characteristics are not far different.

STANDARD POINTS.

I. The following is the only authorized scale of points for Red Polled cattle sanctioned by the American Red Polled Cattle Club:

(1) *Essentials.*

(a) Color, red; the tip of the tail and the udder may be white; the extension on the udder a few inches along the inside of the flank, or a small white spot or mark on the under part

of the belly by the milk veins shall not be held to disqualify the animal whose sire and dam form part of an established herd of the breed, or answer all other essentials of this standard description.

(b) Form; there should be no horns, slugs or abortive horns.

(2) *Points of a Superior Animal.*

(a) Color, a deep red, with udder of the same color, but the tip of the tail may be white.

(b) Nose, not dark or cloudy.

II. The following notes are appended to the above very incomplete description of so excellent a breed:

(1) *Size*—Medium, inclining to large.

(2) *General Outline*—Parallelogrammic form.

(3) *Head*—Neat, clean, inclined to fine, polled and prominent at the poll.

(a) Nose, somewhat fine and a little long.

(b) Muzzle, flesh-colored.

(c) Nostrils, open.

(d) Eyes, full, clear and well apart, with a little dish between them.

(e) Ears, a little long and thin and pointed upward and outward.

(4) *Neck*—A little long and inclining to fine.

(a) Neat at junction with the head, guarding against dewlap.

(b) Widening development at neck vein, but not massive.

(5) *Back*—Wide, particularly at the loin, and straight.

(a) Withers, medium to wide.

(b) Too much prominence at hook points to be guarded against.

(6) *Forequarters*—Nearly evenly developed with the hindquarters, but not massive.

(a) Shoulders, fairly large, smooth, sloping gradually upward and forward.

(b) Chest, wide, especially through the lower half.

(c) Breast, wide, deep and fairly full.

(d) Brisket, between V-shaped and rounded, and wide.

(e) Forearm, of medium development.

(7) *Body*—Large, somewhat long, especially in the females, and capacious.

(a) Ribs, at least moderately outward and rounded in spring and coming well down.

(b) Slackness at crops and fore flank to be guarded against.

(c) Hind flank, coming well out and well downward, but only moderately thick.

- (d) Deficient heart girth is to be guarded against.
- (e) Underline, nearly straight.
- (8) *Hindquarters*—Long, deep and wide.
- (a) Straight rather than full.
- (b) Thighs of medium development.
- (c) Buttock, straight, square, rather than rounded.
- (d) Pin bones, wide, but not prominent.
- (e) Twist, medium.
- (f) Escutcheon, wide and pronounced.
- (g) Tail, long and fine rather than coarse.
- (9) *Udder*—Capacious, not high nor pendulous and nicely quartered.
- (a) Not fleshy, but glandular.
- (b) Unduly large teats to be guarded against.
- (10) *Milk Veins*—Large, coming well forward, branched and milk wells well defined.
- (11) *Skin*—Medium in fineness, pliant, flexible and unctuous and covered with soft hair.
- (12) *Legs*—Medium in length, fine rather than coarse, clean and placed wide apart.

III. *General Outline*—Red Polls are a neat, trim and active breed of cattle, with clean cut outline and much uniformity of color.

IV. Compared with Shorthorns.

- (1) Red Polls are considerably smaller, somewhat less angular, and less broad throughout.
- (2) They are somewhat finer in head, neck and limb.
- (3) They have more marked development of milk veins, and
- (4) The differences in horn development and in color.

LECTURE NO. 40.

DEVON CATTLE—THEIR ORIGIN AND HISTORY.

I. The Devons are one of the most ancient and pure of the distinct breeds of cattle found in Great Britain.

(1) They belong to the middle horned class, and are supposed to be descended from the same aboriginal breed as the Herefords and the Sussex.

(2) The most ancient records tend to show that they have been bred without admixture from time immemorial, in parts of Devonshire and Somerset.

II. They now occupy, with little exception, the whole of the district from Dartmoor forest to the Bristol channel, and from West Somerset to Cornwall.

(1) Good herds of the breed were established early in the century in the shires of Leicester, Gloucester and Shropshire, and in some other parts of England.

(2) Individual herds have also been established at various other points in England and in Ireland, but not to the extent of becoming the prevailing breed, and

(3) Where they were supplanted for a time in the south of England by other breeds, as Shorthorns and Herefords, they are again regaining the ground lost.

III. Of all the British breeds they had the greatest reputation as grazers a century ago, hence

(1) The precedence given them in the prize lists of the Smithfield Cattle Club, and of the Bath and West of England Society.

(2) At that time the North Devon was considered the breed *par excellence* for small bones and high quality.

(3) They were also very popular as oxen, owing to their activity, combined with their staying powers.

IV. It cannot be said that the name of any one person stands out supremely conspicuous as the great improver of Devons, as improvement was

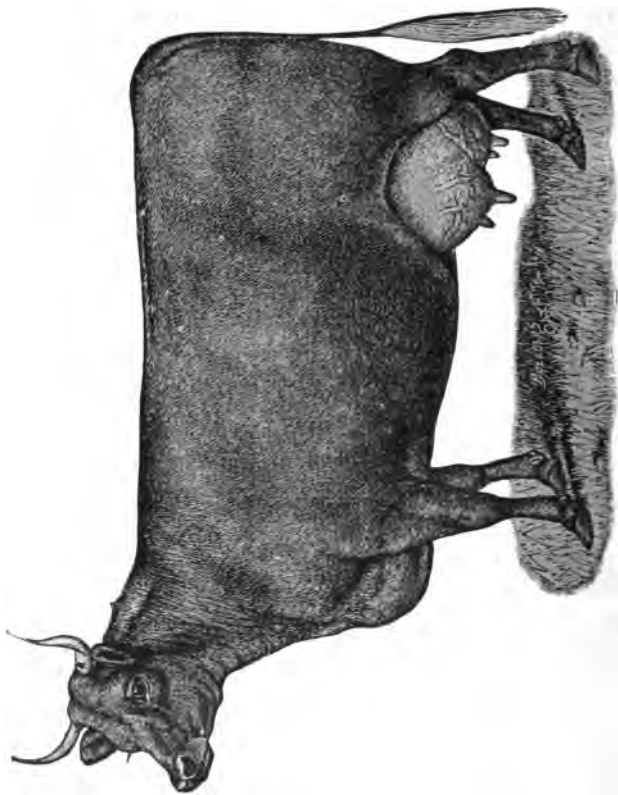


Fig. 26. Typical Devon Cow

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effected by a number of persons working simultaneously and more or less in concert.

(1) Prominent among the early improvers stand the names of Francis Quartly of Champson, Molland; John T. Davy of Rose Ash; Walter Farthing of Stowey Court, Bridgewater; and the Earl of Leicester of Holkham, Leicestershire.

(2) In several instances Devons have been bred in the same families for at least 150 years.

V. The high prices paid for meat early in the century, while the wars with France continued, tempted many breeders to part with their best animals.

(1) This led to a lowering of the average standard of excellence in many herds, but

(2) The equilibrium has again been restored, largely through the establishment of agricultural societies and the demand for good breeding stock.

VI. Devon cattle were early distinguished as North and South Devon respectively, the latter variety being also known as South Hams and Somersets.

(1) The North Devon was the smaller variety, their coat was softer and more curly, and they were more distinguished for their fleshing properties.

(2) The South Devons, supposed to contain a dash of Guernsey blood, were of larger size and of coarser appearance, and were more distinguished for milk production.

(3) These have been so intercrossed in many instances as to obliterate the distinguishing marks of the two classes.

VII. Exportation to the United States.

(1) The first well authenticated importation of Devon cattle was made into the United States by Robert Patterson of Baltimore, Md., in 1817.

(2) They came from the herd of the Earl of Leicester, Holkham, and a very large number of the Devons now in the United States trace to this importation.

(3) From 1817 onward, importations have been frequent until quite recently.

VIII. Exportation to other countries.

(1) Devons were imported somewhat freely into Ontario, Can., shortly after the middle of the century, but they have not prevailed to any considerable extent in that country.

(2) They have also been introduced into Jamaica, Mexico, the Cape of Good Hope, Australia and New Zealand.

IX. Herd books.

(1) The first volume of the English Devon Herd Book, edited by J. Tanner Davy, was published in 1851.

(2) The first volume of the American Devon Herd Book was published in 1863.

(3) The first volume of the American Devon Record was published in 1881.

(4) Registrations are also kept in Ontario and Nova Scotia.

X. Distribution in the United States.

(1) Devons are kept in every state in the Union, save North Dakota, Washington, Wyoming, New Mexico and Arizona, hence,

(2) They are more generally distributed than any breed largely devoted to meat making except the Shorthorns.

(3) They are most numerous in the states of Ohio, Pennsylvania, New York, Connecticut, Massachusetts, Wisconsin, Illinois and Texas, and probably in the order named.

XI. Registration in the United States.

(1) Six volumes of the American Devon Record have been issued.

(2) There have been recorded 18,843 animals, of which 6902 are bulls and 11,941 are cows.

LECTURE NO. 41.

DEVON CATTLE—THEIR LEADING CHARACTERISTICS.

I. Popularity.

(1) In all-round popularity the Devons occupy a place not higher than medium.

(2) Their want of size is against them in rich pastoral and arable sections, and

(3) Their qualities being only medium in the dairy, they are not often preferred to the distinctive dairy breeds for dairy uses, while

(4) It is probably true that less effort has been made to popularize them than in the case of other breeds introduced somewhat early.

II. Adaptability.

(1) The relatively small bodies of the Devons and their active habits and good grazing qualities adapt them to localities where the land is broken, and the soil possessed of but moderate fertility, and

(2) Their fair milking qualities fit them for situations where the arable portions of the land are small in proportion to the pastoral, and where at the same time the system of husbandry is of the mixed order.

(3) They are also better adapted to warm latitudes than the heavier-bodied breeds.

III. Relative size.

(1) In size they are considerably less than the Shorthorn and Hereford, less than the Polled Aberdeen, and something less than the Sussex and Galloway, but

(2) The size is largely dependent upon the strain, the pasture, the breeding and the care.

IV. Milking qualities.

(1) Devons are noted rather for the quality than the quantity of their milk.

(2) Their symmetry of form, their proverbial docility, their well-shaped udders, their medium-sized teats, and their good butter making properties all tend to make them favorites in the dairy under the conditions of adaptation named above.

V. Early maturing qualities.

(1) In this respect they are fair, but probably not quite the equal of some of the heavier breeds that have been more forced in feeding, and yet

(2) Their neat, pony-like frames will mature quickly with good keep.

VI. Grazing qualities.

(1) The grazing qualities of Devons are of the first order, owing

(2) To their muscularity, their activity, and to the inheritance of the grazing habit.

(3) They readily obtain a good livelihood on lands where the heavy-bodied breeds would probably fail, and when food is plentiful they fatten quickly.

VII. Feeding qualities.

(1) They feed quickly in the stall, and make good gains in proportion to the food consumed, but

(2) They cannot stand forcing for so long a period as some of the other breeds.

(3) They lay on flesh evenly and smoothly, hence they are not given to patchiness.

(4) The quality of the meat is excellent, and in the markets of Great Britain it fetches prices nearly as high, and, in some instances, quite as high as those paid for Galloway and West Highland beef.

(5) The meat is nicely veined and marbled, and is well flavored, juicy, and of prime quality.

(6) A large proportion of roast meat is furnished, and the offal is small in proportion to the weight of the carcass.

VIII. Value in crossing and grading.

(1) Devons are highly prepotent, owing to their inherent vigor and to the long period during which they have been bred pure.

(2) They should answer well for crossing upon common stocks where the aim is to improve their easy keeping qualities without impairing their butter producing powers.

(3) Such crossing should be confined within the limits of adaptability suitable to the successful rearing of pure Devons.

(4) The grades from Devons are well adapted to the home market, as they may be fattened at any age.

IX. Breeding qualities.

(1) The natural conditions under which Devons are kept are favorable to the development and maintenance of good

breeding qualities, hence we find those possessed by them in at least a fair degree.

(2) Many of the females breed to an advanced age, as, like all the grazing breeds, they are noted for their longevity.

X. Weak points.

(1) Their lack of size, which renders them less suitable for exportation for beef.

(2) Their lack of supreme dairy qualities, which circumscribes the field of their adaptability in dairying.

XI. Compared with Shorthorns.

(1) Devons are not nearly equal to Shorthorns in general popularity and in size; they are also behind them in all-round adaptability, and are not quite equal to them in maturing qualities, in feeding qualities, and in the extent of the field within which they are useful for crossing.

(2) In milking qualities they are not far different.

(3) In grazing qualities, in the quality of the meat, and in breeding qualities they have a decided lead.

LECTURE NO. 42.

DEVON CATTLE—THEIR STANDARD POINTS.

I. The following scale of points was adopted by the American Devon Cattle Club in 1886:

FOR COWS.

	COUNTS
(1) <i>Head</i> —Moderately long, with a broad, indented forehead, tapering considerably toward the nostrils; the nose of a flesh color, nostrils high and open, the jaws clean, the eye bright, lively and prominent, and surrounded by a flesh-colored ring; throat clean, ears thin, the expression gentle and intelligent; horns matching, spreading and gracefully turned up, of a waxy color, tipped with a darker shade	8
(2) <i>Neck</i> —Upper line short, fine at head, widening and deep at withers and strongly set to the shoulder	4
(3) <i>Shoulders</i> —Fine, flat and sloping, with strong arms and firm joints	4
(4) <i>Chest</i> —Deep, broad, and somewhat circular in character	8
(5) <i>Ribs</i> —Well sprung from the backbone, nicely arched, deep, with flanks fully developed	8
(6) <i>Back</i> —Straight and level from the withers to the setting on of the tail, loin broad and full, hips and rump of medium width, and on a level with the back	16
(7) <i>Hindquarters</i> —Deep, thick and square	8
(8) <i>Udder</i> —Not fleshy, coming well forward in line with the belly and well up behind; teats moderately large and squarely placed	20
(9) <i>Tail</i> —Well set on at a right angle with the back, tapering, with a switch of white or roan hair, and reaching the hocks	2
(10) <i>Legs</i> —Straight, squarely placed when viewed from behind, not to cross or sweep in walking, hoof well formed	4

(11) <i>Skin</i> —Moderately thick and mellow, covered with an abundant coat of rich hair of a red color; no white spot admissible, except the udder	8
(12) <i>Size</i> —Minimum weight at three years old, 1000 pounds	2
(13) <i>General Appearance</i> —As indicated by stylish and quick movement, form, constitution and vigor, and the underline as nearly as possible parallel with the line of the back	8
Perfection	100

FOR BULLS.

COUNTS

(1) <i>Head</i> —Masculine, full and broad, tapering toward the nose, which should be flesh-colored; nostrils high and open, muzzle broad, eyes full and placid and surrounded with flesh-colored ring, ears of medium size and thickness; horns medium size, growing at right angles from the head, or slightly elevated, waxy at base, tipped with a darker shade	10
(2) <i>Cheek</i> —Full and broad at root of tongue, throat clean	2
(3) <i>Neck</i> —Of medium length and muscular, widening from the head to the shoulders, and strongly set on	4
(4) <i>Shoulders</i> —Fine, flat, sloping and well fleshed, arms strong with firm joints	6
(5) <i>Chest</i> —Same as in female	10
(6) <i>Ribs</i> —Same as in female	10
(7) <i>Back</i> —Same as in female	20
(8) <i>Hindquarters</i> —Same as in female	12
(9) <i>Tail</i> —Same as in female	2
(10) <i>Legs</i> —Short, then same as in female	4
(11) <i>Skin</i> —Moderately thick and mellow, covered with an abundant coat of rich hair of a red color; no white spot admissible unless around the purse	8
(12) <i>Size</i> —Minimum weight at three years old 1400 pounds	4
(13) <i>General Appearance</i> —Same as in female	8
Perfection	100

II. Additional particulars submitted though not given in the above scale:

- (1) Horns, somewhat of the semi-spiral upward and outward curvature in the female.
- (2) Withers, of medium width.
- (3) Breast, full and somewhat rounded.
- (4) Brisket, between the V-shape and round.
- (5) Forearm, full and neat.
- (6) Crops, full.
- (7) Hooks and pin bones, not prominent.
- (8) Thighs, full and straight.
- (9) Twist, full rather than open.
- (10) Milk veins, well developed.
- (11) Limbs, inclining to fine and clean.
- (12) Shape, parallelogrammic.

III. *General Appearance*—In general appearance the Devon is neat, smooth, tidy and graceful in form and movement.

IV. Compared with Shorthorns.

- (1) Devons are smaller in form and limb, less broad throughout and less massive.
- (2) They are finer in the muzzle, more spiral and elevated in horn curve and longer in the horns and something less prominent at the angles.
- (3) They are more active and sprightly in movement, and
- (4) There are the differences in color.

V. Compared with Red Polls.

- (1) They are a little smaller and somewhat more tidy in form and limb, and
- (2) They are more rounded in the breast, have a more arched spring of rib and a rather more pronounced beef form.

PART II

BREEDS OF SHEEP

LECTURE NO. I.

SHEEP—THEIR INTRODUCTION INTO AMERICA.

I. The sheep (*Ovis*) is a genus, or, according to some authors, forms a group of genera of mammals belonging to the family *Bovidae*, and are Ruminants, of the Artiodactyle or pair-toed section of the *Ungulata* or hoofed mammals.

(1) As many as 21 different wild species have been enumerated.

(2) They are indigenous only to Asia, Europe, Africa and the western mountain ranges of America.

II. They have been grouped under two subgenera, viz. the *Ovis* and the *Musimon*.

(1) Of the former, twelve species have been named, of which ten are in Asia and two in North America.

(2) Of the latter, seven species have been mentioned, of which one inhabits the mountains in certain islands of the Mediterranean.

(3) In Asia these are generally spoken of as the Argali, or wild sheep, in North America as the Rocky Mountain sheep or Bighorn, and in Europe as the Musimon.

III. Wild sheep are essentially inhabitants of mountainous districts.

(1) They never from choice frequent level deserts, open plains, or dense forests or swamps, and

(2) These natural instincts should be recognized in their domestication.

IV. It is uncertain whether the various species of sheep now under domestication were derived from

any of the existing wild forms, or from the crossing of some of these, or from some now extinct species.

(1) It was a domestic animal in Asia and Europe before the dawn of history, but was unknown as such in America until after the Spanish conquest.

(2) It is now to be found wherever there is a settled agriculture, but

(3) Is much better adapted to the temperate than to the torrid zone, unless when reared on mountain ranges.

V. The variations of external character in sheep include the following:

(1) The number of the horns, which, in many species, are entirely wanting, while others have no fewer than eight.

(2) The arching of the nasal bones.

(3) The form and length of the ears.

(4) The length of the tail.

(5) The development of fat at each side of its root, and within the tail.

(6) The color markings of the face and legs, and

(7) The color, length and quality of the wool.

VI. Sheep are apparently not indigenous to the British islands, as

(1) No fossil remains have been found in the as yet explored true Tertiary beds, hence

(2) It is probable they were brought from the east in pre-historic times.

VII. The breeds of sheep now most in favor in Great Britain show great diversity in size, form and general characteristics, owing

(1) To a difference in origin.

(2) To a difference in climate and food, and

(3) To the nature of the breeding and variations in artificial treatment.

VIII. Although domesticated sheep as they existed in Europe were not found in America at the time of its discovery, yet

(1) In South America four forms of the genus *Auchenia* were found, viz., the Guanaco and Vicuna, and the Llama and Alpaca.

(a) The former were known only in the wild, and the latter in the domesticated state.

(b) These all furnished wool for clothing, and the Llama was also used as a beast of burden, and

(2) In North America there existed the mountain sheep, or Bighorn (*Ovis montana*), and a sub-species, the *Ovis montana dalli*.

(a) The former, commonly called the Rocky Mountain sheep, is found on both slopes of the Rocky mountains, from the head waters of the Saskatchewan on the north, down into Mexico on the south.

(b) The latter, commonly called the Alaskan sheep, is found on the slopes of the mountains from within the Arctic circle southward, nearly as far as the head of Bristol bay.

IX. Domesticated sheep were first introduced into North America by the Spaniards in 1493.

(1) From these are descended the immense native stocks of Mexico, New Mexico and Texas and other parts of the continent first settled by the Spaniards.

(2) It is now pretty certainly proven that these were not Merinos, but were descended from the common sheep of Spain.

(3) In 1736, they numbered more than 1,500,000 head in the Mexican state of Nuevo Leon.

(4) They were taken to California in 1773, and in 1825 the Catholic church owned 1,003,970 head, and the ranchers probably as many.

X. Sheep were introduced into South America from the Spanish settlements in Panama and Mexico.

(1) They were taken to Peru prior to 1550.

(2) From Peru they were taken to Chili about 1550, and at a later period to Chuquisaca, and

(3) From Chuquisaca they were taken to Paraguay and thence to the country of the La Plata.

XI. Sheep were introduced into the English colonies of North America soon after the settlement of each.

(1) They reached Jamestown, Va., in 1609.

(2) They were first brought to New York, then the New Netherlands, in 1625, by the Dutch East India Company.

(3) They were first introduced into New Jersey from Sweden in 1634, or shortly prior to that date.

(4) They were brought into Massachusetts between 1624 and 1629.

XII. In the English speaking colonies, the sheep were essentially British in origin.

(1) They were much inferior to the stocks of the present day.

(2) The extension of the industry was much retarded for a time through losses from wolves, thefts by the Indians, and European enactments forbidding the manufacture of wool.

XIII. Sheep were introduced into various provinces of Canada at an early period in the settlement of each.

(1) They have been bred in these for both wool and mutton uses.

(2) Ontario is justly noted for the many varieties of sheep found there and for their high average in quality.

LECTURE NO. 2.

SHEEP—THEIR IMPROVEMENT AND CLASSIFICATION.

I. From the very earliest ages, sheep-rearing has been one of the most important and profitable industries engaging the attention of mankind, but

(1) Until the more recent centuries they were kept for the wool and milk which they furnished, rather than for their flesh, hence

(2) The improvement of their flesh-producing properties received but little attention prior to the eighteenth century.

II. The improvement of the fleece engaged the attention of mankind at a very early period.

(1) Woolen goods were manufactured in Asia at least 2000 years before the Christian era, and

(2) While Rome was yet a republic the fine wools of Italy were improved to a degree unexcelled by us at the present day.

III. The improvement of the fleece first seriously engaged the attention of the people of the United States.

(1) The object was to enable them to manufacture a fine class of goods for home consumption, and

(2) The breed introduced to enable them to attain this end was the Spanish Merino.

IV. The people of Great Britain and Canada have rather sought improvement in the carcass.

(1) They have attained this end largely through selection, crossing and improved keep, and

(2) In realizing it they have in every instance effected improvement in the wool.

V. Robert Bakewell of Dishley Hall, Leicestershire, was the first great improver of the modern breeds of sheep.

(1) He began this work about 1760, and originated what is now known as the New or Improved Leicester breed.

(2) The material chosen by him was taken from the Dishley or old Leicester breed.

VI. The improvements he sought were more perfect symmetry, aptitude to fatten, early maturity, smaller bone and improved in quality, an increased quantity of improved flesh and a diminution in the quantity of offal.

(1) In accomplishing these objects he also incidentally secured a larger quantity of more valuable wool.

(2) He effected improvement through the selection of the most perfect specimens of the medium types, judiciously crossed and intercrossed for a long term of years.

VII. The aim at the present time in the United States is to improve the mutton qualities of the sheep now in the country, and the means more commonly resorted to in effecting this improvement include the following:

(1) Crossing successively upon these, rams of one or other of the improved mutton breeds.

(2) Selecting with much care breeding stocks from the progeny, and

(3) Giving better food and providing better shelter.

VIII. Nearly all the improved breeds now in the United States, except the Merino, were imported from Great Britain, the country in which they originated.

(1) They are sometimes classified as the heavy breeds, the down breeds and the mountain breeds, but

(2) This classification is not sufficiently concise or complete.

(3) A more common classification is based upon the character of the wool.

IX. The principal breeds imported into North America may be classified as fine wooled, medium wooled and coarse wooled.

(1) Of these the fine wooled breeds are the American Merino, the Delaine Merino and the Rambouillet, fine probably in the order named.

(2) The medium or middle wooled breeds are the South-down, Tunis, Dorset, Shropshire, Cheviot, Suffolk Down, Hampshire Down and Oxford Down, fine probably in the order named.

(3) The coarse wooled breeds are the Leicester, Lincoln and Cotswold, fine probably in the order named.

X. Exception may be taken to the above classification, owing

(1) To the influences of climate and food in producing variations in the same breed, and

(2) To the differences arising from variations in the tastes of the breeders and a want of harmony in their aims, hence

(3) It is not improbable that the above classification, though accepted now, may have to be somewhat modified in the future, and

(4) The same may be said of the average weights of carcass and fleece submitted when discussing the various breeds.

XI. Other breeds.

(1) The Black-faced Highland and Wensleydale breeds have been introduced into the United States, but only in limited numbers.

(2) The Black-faced Highland is a mountain breed from the highlands of Scotland, small, active and hardy, horned in the rams, spotted on the head and legs, covered with a long fleece of coarse carpet wool, and produces mutton unexcelled in quality.

(3) The Wensleydales are a large and heavy-bodied breed from the north of England, with long and coarse wool which hangs in spirals.

(4) As public records are not as yet kept of those interesting breeds in the United States, they will not be further noticed in this work.

LECTURE NO. 3.

SHEEP—LEADING ESSENTIALS AS TO FORM AND WOOL.

I. The mutton breeds all possess the same leading essentials as to form. These include :

(1) Width, depth and length of body and compactness of frame.

(2) The cylindrical shape which is the outcome of plump shoulders and hips, and well sprung ribs, and

(3) A fleece of even length and quality, covering all parts of the body.

II. The minor points of difference include :

(1) Variations in size of carcass and bone.

(2) Variations in the length of the leg and of the coupling of the body.

(3) The color of the head and legs, and the amount of covering on them.

(4) The form and carriage of the head.

(5) The length, shape and carriage of the ears, and

(6) The length and density of the fleece and the character of the staple.

III. Leading essentials of the rams of the mutton breeds as to form.

(1) *Size*—Medium to large for the breed, and the bone medium to strong, but not coarse.

(2) *Outline*—The body should be smooth, compact and strong, cylindrical in shape and square at the ends.

(3) *Head*—Medium to strong in size, short rather than long, but varying with the breed, and carried proudly.

(a) Nose and muzzle tapering, but not too fine.

(b) Nostrils, wide and expanded.

(c) Forehead and poll, wide.

(d) Eye, large, full, bright and daring.

(e) Ear, medium in size and thickness for the breed, broad rather than long, erect rather than drooping, and possessed of lively play.

(4) *Neck*—Short rather than long, not coarse, and carrying the head well erect.

(a) It should not be coarse at the junction with the head, and should be free from throatiness.

(b) It should be round rather than flat, and should increase in width laterally and underneath as it recedes from the head.

(c) It should fit into the withers evenly above, and into the shoulders evenly and strongly at the sides and underneath, the blending being imperceptible.

(5) *Body*—Long, wide, deep, round and equally well balanced before and behind.

(a) Back, level, wide, well fleshed and slightly rounded outward, with the spinal column hidden and even depressed from the loin to the tailhead.

(b) Loin, broad and full.

(c) Underline, straight.

(d) Breast, broad, deep, full, massive.

(e) Brisket, broad and well rounded.

(f) Shoulder, large, plump and smooth, wide above, rounded out from above, forward and below to the center, well filled before and behind, and well covered.

(g) Forearm, strong and well developed.

(h) Crops, well filled.

(i) Girth, good around the heart, and about equally good at the hind flank.

(j) Coupling, short rather than long.

(k) Ribs, well sprung from backbone, nicely arched and deep, not distant from one another and coming well forward and backward.

(l) Hindquarters, long, broad and deep, rounded out from above and behind toward the center of the hip, and broad at the buttock.

(m) Twist, well filled and placed low.

(n) Hind flank, well filled outwardly, low and thick.

(o) Thigh, broad and well filled within and without.

(p) Tail, set on smoothly and on a line with the back.

(q) Skin, a rich pink in color, and possessed of good handling qualities.

(6) *Wool*—The whole body should be well covered with wool, characteristic of the breed.

(a) It should be of uniform length and texture, and

(b) Possessed of all the qualities essential in first-class wool (see Note V. below).

(7) *Legs*—Short, straight and strong, wide apart and yet well under the body and standing firmly on hoofs of good shape and quality.

(8) *Appearance*—The appearance should be animated and the carriage easy, proud and graceful.

IV. The ewes of the mutton breeds possess the same leading essentials as to form as the rams, with the following points of difference:

(1) They are not so large in frame, are finer in bone and are more roomy in the barrel or coupling.

(2) The head is smaller and finer and is carried less proudly.

(3) The neck is longer and finer, more especially where it joins the head.

(4) The twist is not quite so well filled, and

(5) The wool is finer in the fiber, at least in some instances.

V. The following include the more important of the characteristics of a good fleece:

(1) Good length, strength and sufficient density of staple for the breed.

(2) Even distribution over the body, both as to length of staple and quality in the wool.

(3) A fine bright uniformly lustrous appearance.

(4) Absence of cloudiness.

(5) Freedom from kemp and cot and

(6) The absence of all such impurities as sand, burs and chaff.

FINE WOOLED BREEDS

LECTURE NO. 4.

THE AMERICAN MERINO—ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. The Merino sheep, now found in various countries, came originally from Spain, but there is much difference of opinion as to the exact origin of the Spanish Merino.

(1) Even anterior to the Christian era, fine wooled sheep abounded in Spain, the fleeces of which were much prized for purposes of manufacture, and

(2) It has been claimed that these were improved by sheep brought from Tarentum in the first century.

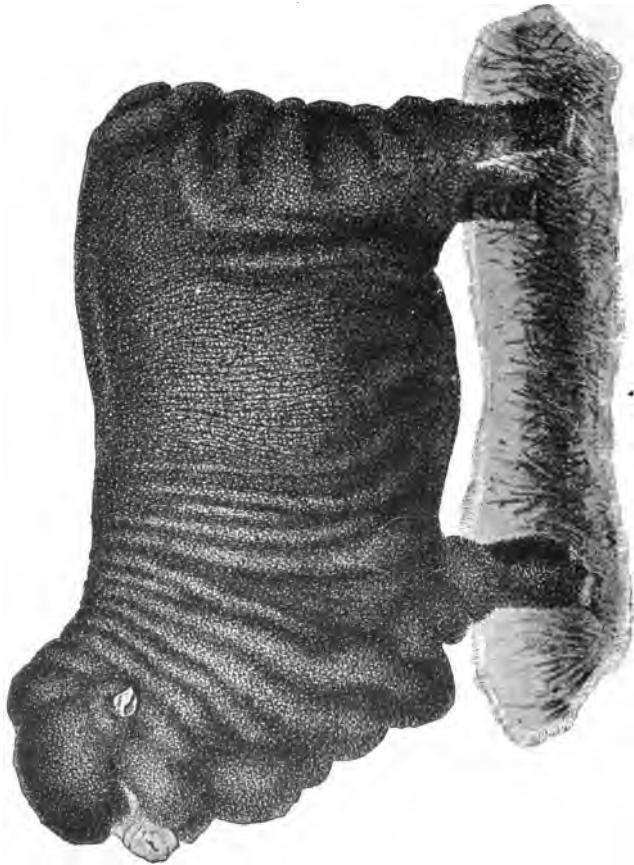
II. For several centuries past, the Merinos in Spain have been divided into provincial varieties, and these again into sub-varieties, or great permanent flocks, usually termed Cabanas.

(1) These Cabanas were again known as Transhumantes, or traveling flocks, and Estantes, or stationary flocks.

(2) Prominent among the sub-varieties were the Infantadoes, Paulars, Escurials, Negrettis, Montarcos, Guadaloupes and Aguirres.

III. Merinos have been extensively imported into France, Germany, the United States, Australia and other countries.

(1) They were imported into Saxony in 1765, where the wool has been brought to an unprecedented condition of fineness, but at the expense of size of carcass and constitution.



(184) **Fig. 27. Typical American Merino Ewe**

(2) They were imported into France in 1786, and there they have been much improved, more especially in size and in weight of fleece.

(3) They were imported into Australia about the beginning of the century and now they are more numerous there than in any other country.

IV. The first importation of the Spanish Merino was made into England by George III in 1791, but

(1) Though backed by numerous and influential patrons of the breed, they have never come into general favor, owing

(2) To their deficiency in mutton qualities.

(3) For the same reason they have never become popular in Canada.

V. Importations into the United States.

(1) The first traceable importation of Merinos into the United States was made by Col. David Humphreys of Derby, Conn., in 1802.

(2) Other importations followed quickly, and on the dispersion of many of the Spanish flocks during the wars with the French, many thousands were imported, more especially in 1810 and 1811.

VI. All the varieties and sub-varieties of Merinos in the United States are of Spanish origin.

(1) They may be classified as American Merino, Delaine Merino and Rambouillets or French Merino.

(2) The American Merinos are possessed of all the valuable essentials of the Spanish Merino and these have been greatly improved upon.

(3) The Delaine families are offshoots of the American Merinos and have a longer fleece and an improved mutton form.

(4) The Rambouillets are the offshoots of Spanish Merinos, much increased in size by long years of careful breeding.

VII. Improvements made in the United States.

(1) The Merino has been greatly improved in size, form, mutton qualities and weight of fleece since it was first imported into America.

(2) This improvement has been brought about through selection, breeding and improved conditions of keep.

(3) Prominent among the early improvers stand the names of Stephen Atwood, Woodbury, Conn.; Edwin Hammond, Middlebury, Vt., and the Hon. C. Rich, Shoreham, Vt.

VIII. Organizations.

(1) Probably more than a dozen organizations have been formed in the United States in the interests of American Merinos.

(2) Several of these are local, since they restrict registration to a single state.

(3) The number of these organizations and the conflict of interest which of necessity has grown out of them has in some instances been harmful rather than helpful to the breed.

IX. Distribution of Merinos in the United States.

(1) Merinos and their grades are now bred numerously in almost every state and territory in the Union.

(2) About a quarter of a century ago they were thought to comprise 95 per cent of all the sheep in the United States.

(3) During recent years the relative proportion of Merinos has been greatly reduced by the increased attention given to the production of sheep of the mutton breeds.

(4) While they are found almost everywhere they prevail most in states where the conditions, food and climate are less propitious, as, for instance, in the range states.

X. Registration in the United States.

(1) It is almost impossible to state accurately the number of registered Merinos, because of the decadent condition of some of the organizations.

(2) The increased demand during recent years for sheep of the mutton types and for wool longer and less fine than the Spanish Merinos furnish, has given them a less prominent place relatively than they formerly occupied.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Merinos are among the lightest of the pedigreed breeds in the United States, and

(2) The average weight of the rams in fairly good flesh may be put at about 140 to 175 pounds and of the ewes at about 90 to 125 pounds, but the weights of Merinos vary much with variations in environment.

II. Adaptability.

(1) In general adaptability no breed on the continent has shown itself equally flexible, and this will apply both to climate and food products, but

(2) They are specially fitted to "rough it" under conditions of privation as to food and shelter.

(3) They have a higher adaptation to the production of wool than of mutton, but their mutton producing qualities are being continually improved.

III. Early maturing qualities.

(1) Though improved in this respect, they are yet behind the other pedigreed breeds in early maturity, but on the other hand they are ahead of them in longevity.

(2) An average Merino does not become fully matured until between three and four years old.

IV. Grazing qualities.

(1) As grazers they are entitled to a first place.

(2) They will eat almost any kind of herbage, however dry, in the summer season.

(3) Their active habits peculiarly adapt them for grazing on broken lands and wide ranges, where they must travel much to secure their food.

V. Feeding qualities.

(1) In feeding qualities Merinos are not equal to some of the other breeds, as they cannot be made to gain so quickly as a rule, but

(2) They feed better probably than any breed when confined to a ration of dry hay and corn.

VI. Quality of the meat.

(1) Much of the meat of the pure Merino is lacking in tenderness, juiciness and flavor, and it has much bone in proportion to the meat, but

(2) The quality of the meat has greatly improved during recent years.

VII. Value in crossing and grading.

(1) The Merino has been found peculiarly valuable for crossing upon common grades, where more and finer wool was wanted, but

(2) When crossed upon pure-breds, improvement in wool production is often counteracted by impaired mutton qualities.

VIII. Breeding qualities.

(1) Merinos are not noted for their prolificacy, nor are the dams really first-class milkers or mothers, but

(2) They breed profitably to a greater age than some other breeds.

IX. Wool production.

(1) The pure Merino produces beyond all comparison the finest wool grown on this continent.

(2) It also produces the heaviest fleece in proportion to the live weight of the animal.

(3) The average weight of the fleece from the matured ram may be put at fifteen to twenty pounds and of the matured ewe at twelve to fifteen pounds, according to type.

PRINCIPAL POINTS.

I. In the absence of an authorized scale of points the following is submitted:

(1) *Size*—Medium for the breed, with a decided leaning to increase.

(2) *General Outline*—Parallelogrammic, but a nearer approach to the cylindrical would be desirable.

(3) *Head*—Medium in size, but strong in the ram, broad above the eyes, wedge-shaped and covered nearly all over with wool which almost hides the eyes.

(a) Nose, short and wrinkly.

(b) Ears, small and of moderate erection, with a coat of soft, mossy hair about half way to the roots, the remainder covered with wool.

(c) Horns, in the rams only, of considerable size, angular at the base and projecting spirally outward.

(4) *Neck*—Inclining to short and thick, almost throaty, especially in the rams.

(a) Flatness in the neck should be avoided.

(b) In both sexes it is frequently wrinkled, but especially in the rams, and both have more or less of dewlap.

(5) *Back*—Wide, straight and level.

(a) High withers and a high pelvis are to be guarded against, and

(b) A sharp spinal column is equally objectionable.

(6) *Forequarters*—Of equal development with the hind-quarters.

(a) Withers not narrow nor sharp, as they are in some instances.

(b) Shoulders, plump and rounded out and blending nicely with the neck.

(c) Chest, wide.
 (d) Breast, wide, deep and at least moderately full.
 (e) Brisket, low, wide and rounded and extending well in front.

(7) *Barrel*—Moderately long and roomy.
 (a) Ribs, round and deep, though frequently lacking in spring, which is of course objectionable.

(b) Crops, full and even.

(c) Flanks, full and deep.

(d) Heart girth, good.

(e) Underline, straight.

(8) *Hindquarters*—Long, deep, wide.

(a) Hips, large and full.

(b) Crupper, straight, not drooped, nor sloping outwardly.

(c) Thighs, plump.

(d) Buttock, wide, straight.

(e) Twist, well filled and low.

(9) *Legs*—Short, strong and straight.

(a) They should be placed wide apart and should stand firmly.

(b) The wool, which covers them to the hoof, makes them appear larger than they are.

(10) *Skin*—Thin, mellow, elastic, loose and of a rich rose or pink color.

(a) Excessive wrinkling or folding of the skin is not so much encouraged now, but

(b) Heavy neck folds on the rams are still in favor with many.

(11) *Fleece*—The fleece should contain fine wool from two to three inches long, evenly distributed and even in quality.

(a) It should present a dense, smooth, even surface or exterior, opening only in the natural cracks which separate the masses.

(b) It should stand at right angles to the skin.

(c) It should possess even strength of fiber from end to end.

(d) It should be wrinkled, curved or crimped, and should be highly elastic.

(e) Regularity and beauty of curvature are considered important.

(f) Hairs growing up through the wool in any part is quite inadmissible.

II. *General Appearance*—In general appearance the American Merino is a somewhat small and deep-bodied sheep of only moderate width, encased in a fleece of very fine, close, short and dense wool

and carrying more or less of wrinkles or folds in the skin, especially about the neck and breast.

III. Weaknesses to be particularly guarded against in selecting Merinos :

- (1) Lack of width and flatness of rib.
- (2) A V-shaped brisket and narrow chest.
- (3) Legs standing closely together.
- (4) Excessive wrinkling or folding of the skin.

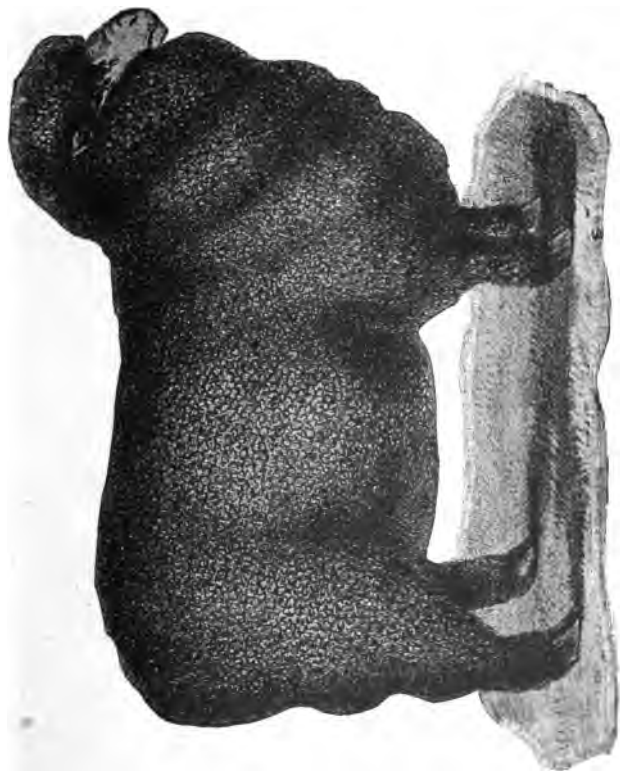


Fig. 28. Typical Delaine Merino Ewe

(191)

LECTURE NO. 5.

DELAINE MERINOS—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

I. Delaine sheep are simply American Merinos with a larger carcass, a better mutton form, fewer wrinkles on the body and a longer fleece of wool.

(1) They are of several sub-varieties, all of which have been evolved from the American Merino by selection and careful breeding.

(2) They are a creation of the skill of breeders operating more particularly in Ohio and Pennsylvania.

II. Origin of the name.

(1) The name originated from the class of goods known as delaines, for the manufacture of which the wool of these sheep has been found eminently adapted.

(2) Delaines, *i. e.*, untwilled dress goods, were originally all wool, but are now manufactured with cotton warp and woolen filling.

III. The principal varieties.

(1) No classification of Delaine Merino sheep can be made at the present time that can be looked upon as complete or final because of the transition that is yet apparently uncompleted in some of the types, but

(2) It would probably be correct to say that the chief of the types, or sub-types, always designated Delaine, are the Standard, the National and the Improved Delaines respectively, and

(3) The chief of the types, or sub-types, essentially Delaine in their leading characteristics, but not always so designated, are the Black Top Spanish Merino, the Improved Black Top Merino and the Dickinson Merino, respectively.

(4) The distinctions between these two classes are such as relate to size, character of the fleece, the absence or presence of wrinkles and horns, and blood elements varying in what may be termed purity in descent from more or less distinguished ancestry.

(a) The distinctive Delaine Merinos have horns, in the rams, and more or less of wrinkles or folds on the neck and breast.

(b) The Black Top varieties have horns in the rams, but no wrinkles, and are further characterized by an abundant closure of fleece of a black color.

(c) The Dickinson Merinos have no horns or wrinkles, and they are further distinguished by size and length of fleece.

IV. In all these types the improvement sought related chiefly to size, form, smoothness, wool production and breeding qualities.

(1) The aim was to secure a considerably greater size and weight than that possessed by the average American Merino.

(2) The form was broadened and deepened, that is to say, it was more conformed to the mutton producing types.

(3) The wrinkles and folds were entirely removed, or left only on the neck and breast.

(4) The length of the wool was increased and the weight of fleece preserved, or measurably so, without an excess of yolk in it, and with but little diminution in fineness and density.

(5) More regular breeding was secured with an increased milk production.

V. How improvement was effected.

(1) Improvement was almost entirely brought about through breeding, selection and feeding.

(2) In some instances line breeding was resorted to, but not in all.

(3) The selection had a careful regard to all the ends sought, but especial prominence was given to the wool, which changes so much more slowly than the form.

VI. When improvement was effected.

(1) The improvement in the types designated Delaines has been chiefly effected within the past half century, though

(2) Some of the foundation flocks in the less improved form were started earlier.

VII. Organizations.

(1) The associations formed in the interest of the types denominated Delaine are known as the Standard Delaine, the National Delaine and the Improved Delaine.

(2) These have only been organized during recent years.

(3) Each has a scale of points, keeps records and issues flock books.

VIII. Distribution in the United States.

(1) Delaines are found most numerous in the states of Pennsylvania, Ohio, Iowa, Michigan and New York, and probably in the order named.

(2) They have also been introduced into quite a number of the other states.

IX. Registration in the United States.

(1) The Standard Delaine and National Delaine associations have registered 24,700 animals, of which 9,500 are rams and 15,200 ewes.

(2) The three associations named in Note VII have probably registered considerably over 30,000 animals.

LEADING CHARACTERISTICS.

I. Relative size.

(1) They are larger and heavier than the American Merino, but not so large or so heavy as the Rambouillets.

(2) The average weight of the matured rams in the various types when in good flesh may be put at 140 to 190 pounds, and of the matured ewes at 100 to 150 pounds.

II. Adaptability.

(1) They are adapted virtually to the same kinds of pastures as the American Merinos, though their larger frames call for better grazing.

(2) They are relatively better adapted to arable conditions than the American Merino, but are perhaps not quite equal to the former in hardihood.

III. Early maturity.

(1) In early maturing qualities they are something of an improvement on the American Merino, but are not quite equal to some of the Down breeds.

(2) The lambs can, however, be made ready for market within a few months of the date of birth, where this may be desired.

IV. Grazing qualities.

(1) These are good in the Delaines, but they have not quite the same rustling qualities as the American Merino.

(2) The latter will thrive better on scant supplies of herbage, but the former will give returns more satisfactory where food is abundant.

V. Feeding qualities.

(1) The feeding qualities of Delaines are at least equal to those of any of the Merino families, if not indeed superior, but

(2) As yet it can scarcely be said that they feed to so fine a finish as the Down breeds.

VI. Quality of the meat.

(1) The mutton has no superior among the Merino families.

(2) The improved mutton form which they possess is reflected in the excellent quality of the mutton which they furnish and in the fair proportion of the dressed meat in the carcass.

VII. Value in crossing and grading.

(1) They have special adaptation for being crossed upon grade stocks where dense and fine wool is wanted and where at least fair mutton qualities are to be maintained.

(2) At the present time the Delaine cross is very popular on western ranges, where the average fleece has become too light and open.

VIII. Breeding qualities.

(1) These, it is claimed, are superior to those in the American Merino, since the breeders have carefully sought improvement in this direction.

(2) The milking qualities have also shared in the improvement thus secured.

IX. Wool production.

(1) The fleece in the matured ram well kept should average in the various types about twelve to eighteen pounds and in the matured ewe about nine to fifteen pounds.

(2) The wool is fine and scours well, since the yolk in it, though plentiful, is not excessive.

(3) It should not be less than three inches in length, but is usually considerably longer.

X. Compared with American Merinos.

(1) Delaine Merinos are considerably larger and heavier, have higher adaptation for arable conditions, mature somewhat more quickly, make better mutton, are superior in crossing for mutton production, are somewhat ahead in breeding qualities and have a longer and nearly equally heavy fleece of wool, which loses less in scouring.

(2) American Merinos are possessed of somewhat superior ruggedness, have a wider adaptation for grazing, fare better on indifferent food supplies summer and winter, are superior for crossing where closeness of fine wool and highest hardihood are to be maintained, and have on the whole a shorter and finer fleece of wool and heavier in proportion to the live weight of the animals.

STANDARD POINTS.

I. The following is the scale of points drawn up by the Standard Delaine Spanish Merino Sheep Breeders' Association:

	POINTS.
(1) <i>Pure Merino Blood</i> , which must be established by certificate	—
(2) <i>Constitution</i> , indicated by a deep chest, long rib well arched, giving heart and lung room, with great digestive capacity	20
(3) <i>Fleece XX and Delaine Wool</i> —This includes the quantity and quality as shown by weight of fleece, the length and strength of staple, crimp, fineness and trueness of fiber	10
(4) <i>Density</i> of fleece	3
(5) <i>Evenness</i> of surface	3
(6) <i>Evenness</i> of crimp	3
(7) <i>Length</i> of fiber	2
(8) <i>Free Flowing Oil</i> of the best quality and the right quantity to protect the sheep and preserve the fleece	9
(9) <i>Head</i> , medium size. Ewes showing a feminine appearance; rams, a masculine with properly turned horns	4
(10) <i>Eyes</i> , bright, prominent and well set apart, with thick, soft eyelid	3
(11) <i>Nose</i> , short, broad with well expanded nostrils, skin thick and covered with a thick, furry coating, joining the wool one inch below the eyes	4
(12) <i>Ears</i> , medium size, set well apart, thickly coated	2
(13) <i>Neck</i> , short on top, deep and strongly attached to shoulders, tapering to head; rams with a fold across the breast, and deep neck	4
(14) <i>Fleece</i> , covering over the entire body, head and legs; skin thick and spongy	4
(15) <i>Legs</i> , short, strong and well apart	2
(16) <i>Feet</i> , neatly shaped, thin hoof, well set under the leg	4
(17) <i>Quarters</i> , deep and well rounded; back, broad, straight and strongly coupled to quarters	10

	POINTS.
(18) <i>Weight of Ewes</i> at maturity, 100 pounds and above; rams, 150 and above	8
(19) <i>General Appearance</i> , good carriage, bold and vigorous style, symmetrical form	5
Perfection	100

II. Scaling prior to registration.

(1) Before being admitted to registry the sheep must be scaled, by a competent person, on blanks furnished by the secretary.

(2) They cannot be recorded unless they scale 60 per cent in every particular and 70 per cent in the total of points, but

(3) The scale of points given above does not apply to all sheep of this class, since a standard of excellence has been drawn up by some of the other Delaine associations.

III. *General Appearance*—In general appearance Delaines are compact and strong in build, nearly free from wrinkles and folds, covered with an even and abundant fleece of wool, dark in color on the outside, and possessed of a vigorous style and easy carriage.

IV. Compared with American Merinos.

(1) Delaines are larger, more compact and symmetrical in build, stronger in bone and possessed of better average spring of rib.

(2) The limbs stand wider apart before and behind.

(3) They are more free from wrinkles, folds and dewlap—

(4) They have a longer fleece, equally well distributed over the body, but not quite so fine nor so well glued together on the surface, although

(5) These contrasts do not equally apply to all of the improved varieties of the American Merino.

LECTURE NO. 6.

RAMBOUILLETS — ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. Rambouillets are the direct descendants of the Spanish Merino, improved by more than a century of careful breeding and selection.

(1) The improvement thus made was principally achieved in France, hence the breed is frequently spoken of as the French Merino, and

(2) This improvement relates chiefly to size, vigor, length of wool and strength of texture in the same.

II. Where improvement was effected.

(1) Until recent years the improvement of Rambouillets has been effected almost entirely at the government farms in France, and chiefly at Rambouillet, which gave the name to the breed.

(2) The Royal flock at Rambouillet was established in 1786 by Louis XVI of France.

(3) In that year 383 animals were selected from the best flocks of Spanish Merinos in Spain and brought to Rambouillet, and a second importation was made in 1801.

(4) The ultimate object sought was to prevent Spain from securing a monopoly in the manufacture of fine wool.

III. How improvement was effected.

(1) The improvement of Rambouillets has been brought about by long years of careful breeding within the fold at Rambouillet, by the most rigid selection and by liberal feeding.

(2) Much experimenting was done with a view to further the ends sought.

IV. The extent of the improvement made.

(1) The mutton form has been greatly improved, also the quality of the meat, and the weight of the carcass has been



Fig. 29. Typical Rambouillet Ewe

(199)

increased from 50 to 100 per cent over that of the old Spanish Merino.

(2) Greater density has been secured in the fleece without any deterioration in the quality of the wool, and its weight has also been increased from 50 to 100 per cent.

(3) The stamina and breeding qualities have also been greatly improved.

V. Distribution in other countries.

(1) Rambouillets have been exported to many countries in Europe, to the United States, Australia, Argentina and New Zealand, and

(2) They have been thus introduced into these countries chiefly to effect improvement in the wool product of other classes of sheep.

VI. Introduction into the United States.

(1) From 1840 to 1860 several importations were made into the United States from France and were distributed chiefly in Vermont, New York and Michigan.

(2) In the decade following the civil war, Rambouillets in their purity, in a great measure, disappeared because of the little premium put upon mutton qualities.

(3) Within the last two decades there has been a great revival in importing and breeding Rambouillets.

VII. Crosses made.

(1) Rambouillets have been extensively used in crossing on the Spanish Merino flocks, pure and graded, to secure increased size and vigor.

(2) These crosses have been most extensively made in California, Utah and Kansas.

(3) They have increased the length of the staple and also the weight of the scoured fleece.

VIII. Introduction on Western ranges.

(1) Rambouillets are now in high favor for crossing upon mixed types on the ranges of the west.

(2) The cross increases the weight of the fleece without impairing the mutton qualities of range stocks or their hardihood.

IX. Organizations.

(1) Associations have been formed for the protection of Rambouillets on the continent of Europe and in the United States.

(2) The American Rambouillet Sheep Breeders' Association was organized at Pontiac, Mich., in 1889.

(3) In the first volume of the Record published in 1891, Bernardin's history of the origin of the breed is published in condensed form.

X. Distribution in the United States.

(1) Rambouillets are already distributed more or less over nearly all the Northern and Middle states, from the Atlantic to the Pacific, and they are now found in several of the Southern states.

(2) They would seem to be most numerous kept in Michigan, Ohio and Pennsylvania.

XI. Registration in the United States.

(1) There have been recorded in all about 9,000 animals, of which approximately one-third are males.

(2) The number recorded would have been greater but for the fact that many of the males sent to the western ranges have not been recorded.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Rambouillets are much the largest of the fine wooled breeds, and they are also heavier than some of the middle wooled breeds.

(2) The average weight of the rams at maturity when in good flesh is about 175 to 225 pounds, and of the ewes about 125 to 175 pounds.

II. Adaptability.

(1) Because of their great hardihood they have much adaptation to range conditions where the vegetation is not sparse nor lacking in nutrition.

(2) For a similar reason they are admirably adapted to arable conditions where valley and broken land alternate and where much meat and fine wool are wanted.

III. Early maturing qualities.

(1) As with the other fine wooled breeds these are not more than medium, but

(2) On the other hand they are noted for longevity.

(3) In many instances deterioration has not been observed in the wool clip until beyond the age of ten years.

IV. Grazing qualities.

(1) These are unexcelled by any breed with so large a frame.

(2) They have the true Merino instinct for a variety of plants, including some which are not relished by the mutton breeds.

V. Feeding qualities.

(1) Rambouillets will winter on coarser food products than some other breeds.

(2) They will also fatten in good form, but must have liberal feeding.

VI. Quality of the meat.

(1) While the quality of the meat is good it is not fully equal to that of the mutton breeds, owing.

(2) To more of coarseness and ranginess of frame.

VII. Value in crossing and grading.

(1) Rambouillets are admirably adapted for crossing upon range stock where the object is to secure a fairly large carcass covered with a good heavy fleece of wool, so dense that it will resist the influences of much exposure, but

(2) They should not be crossed on mutton breeds where the highest quality of mutton is sought.

VIII. Breeding qualities.

(1) Rambouillets breed regularly and are fairly good nurses, but

(2) They are not distinguished for their prolificacy.

IX. Wool production.

(1) Rambouillets produce a long, dense and heavy fleece of fine wool with a sufficiency, but not an excess, of yolk and possessed of good strength of fiber.

(2) The average weight of the unwashed fleece in matured rams may be put at about fourteen to eighteen pounds, and in ewes at about ten to fourteen pounds.

X. Compared with American Merinos.

(1) Rambouillets are much larger, have better mutton form and better feeding qualities and a longer staple of wool.

(2) The American Merinos have a wider adaptation in grazing, since they would maintain themselves under some conditions where the larger Rambouillets would fail.

(3) In other respects they are very similar in their characteristics.

PRINCIPAL POINTS.

I. In the absence of an authorized scale of points, the following is submitted :

(1) *Size*—Medium for the breed, but considerably larger than in any of the other Merino families.

(2) *General Outline*—Large, strong of limb, and at least fairly even and smooth.

(3) *Head*—Medium in size, wide at the poll and somewhat fine at the muzzle.

(a) It is completely covered with dense wool, except for a short distance from the muzzle upward.

(b) Eye, large and clear, though closely surrounded with wool.

(c) Ears, inclining to short, with outward and slightly upward erection and covered with fine hair.

(d) Horns, in the male only, which, on leaving the poll, make a backward, downward and forward semi-circular curve, and then circle outward at the tips.

(4) *Neck*—Inclining to short and deep.

(a) It should blend evenly into the shoulders.

(b) Excessive dewlap and throatiness are to be guarded against.

(5) *Back*—Broad, straight and of even width.

(a) Withers, wide and not sharp or elevated, as they sometimes are.

(b) Loin, wide, strong.

(c) Pelvic arch, not elevated.

(6) *Forequarters*—Fully equal to the hindquarters in development.

(a) Shoulders, well rounded out, and not rough at the points.

(b) Chest, wide and deep.

(c) Breast, wide, well forward and carrying one or more folds or wrinkles, especially in the rams.

(d) Brisket, wide.

(e) Forearm, strong and well muscled.

(7) *Barrel*—Deep, inclining to long, but not really rangy.

(a) Ribs, deep and rounded rather than downward in their spring.

(b) Crops, level and not sunken as they sometimes are.

(c) Fore and hind flanks, well down and full.

(d) Girth at heart and hind flank, good and about even.

(e) Underline, straight.

(8) *Hindquarters*—Long, wide, deep, square behind.

(a) Hips, large and rounded on the side rather than sloping.

(b) Crupper, creased, and possessed of moderate and gradual downward slope.

(c) Thighs, broad and full.

(d) Twist, well down and full.

(g) *Legs*—Strong, straight and of but moderate length.

(a) They should be placed well under the body and wide apart.

(b) Too much of length is to be guarded against.

(10) *Fleece*—Long, fine, even in length and quality and dense.

(a) The fiber should be strong, elastic, beautifully crimped, not less than four inches long at one year, and should stand at right angles to the body.

(b) When opened it should present a bright, lustrous, oily appearance.

(c) While the yolk or oil should be abundant, flakes and scurf should be absent.

(d) It should cover every part except for a short distance above the muzzle, the eyes and ears, and below the fetlock.

(e) Skin, pinkish or flesh-colored.

II. *General Appearance*—The Rambouillet is a tall, strong sheep, a little upstanding, only fairly symmetrical in form and of easy action.

III. Compared with the American Merino.

(1) The Rambouillets are much taller, larger, heavier, stronger limbed and are somewhat more rangy.

(2) They have a better mutton form and are also considerably less wrinkled, and

(3) The wool is much longer, but is not quite so dense or fine, and is much more free from excess of yolk.

IV. Compared with the Delaines.

(1) The Rambouillets are considerably taller, larger, heavier and stronger limbed and are somewhat more rangy.

(2) They have a mutton form not quite so smooth or refined.

(3) The wool of the two types is very similar in many respects, but the Rambouillet fleece is not so heavy in proportion to the size of the sheep.



Fig. 30. Typical Southdown Ewe

Tuesday 9 A.M.

THE MEDIUM WOOLED BREEDS

LECTURE NO. 7.

SOUTHDOWN SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Southdowns are so named from a long range of chalky hills upon which they originally pastured.

(1) These hills extend through the southern part of the counties of Kent, Sussex, Hampshire and Dorsetshire.

(2) They are some sixty miles long and five or six miles broad and are contiguous to the sea and also to vale land capable of furnishing plentiful supplies of food.

(3) They have a dry soil and are covered with a rich, sweet, short, dense herbage.

II. On these hills the progenitors of the Southdowns have fed for many centuries.

(1) They are one of the smaller varieties of sheep originally found in various parts of England, which were characterized by dark faces and feet, and in some instances by wool of the same character, and nearly all of which were horned.

(2) Improvement in Southdowns was effected much earlier than in any of the other dark-faced breeds.

III. External characters of the original Southdown.

(1) They were small in outline, long and thin in the neck, narrow in the forequarters, high in the shoulder, sharp on the back, low behind, flat in the rib and long though not coarse in limb.

(2) The wool was short, fine and curling.

(3) It is thought originally they were horned, but none have existed within the historic period of the breed.

IV. The improvement of Southdowns began about the period of the American Revolutionary war in 1776.

(1) It received its chief impulse, however, from the high prices paid for mutton during the Napoleonic wars.

(2) The two most noted improvers of the breed were John Ellman of Glynde, near Lewis in Sussex, and later Jonas Webb of Babraham, Cambridgeshire.

V. John Ellman began his work of improvement about 1780, and died in 1832.

(1) While improving the form he guarded well the constitutional qualities of the animal.

(2) He left this beautiful breed much the same in type as it is to-day.

VI. Distribution of Southdowns in Britain.

(1) They have virtually superseded the ancient breeds of Berkshire, Hampshire and Wiltshire, and for a time greatly circumscribed the limits of the area occupied by horned Dorsets.

(2) They occupy limited areas suited to their requirements in many of the counties of England and they have also been introduced into Scotland to some extent, and

(3) They have been so fused into several breeds as to almost obliterate their distinctions.

VII. Importations into the United States.

(1) They were imported into America from England about the beginning of the century.

(2) Dr. Rose of Fayette, Seneca county, N. Y., possessed a small flock as early as 1803.

(3) Importations have been made at intervals during the century, but not in large numbers.

(4) The great demand during much of the century for fine wool and the relatively small size of this excellent breed have militated against its rapid distribution.

VIII. Organizations.

(1) Associations to promote the interests of the breed have been established, first, in the United States and later in Great Britain.

(2) The American Southdown Breeders' Association was organized in 1882.

IX. Distribution in the United States and Canada.

(1) Southdowns have been recorded from forty-three different states and from six provinces of Canada.

(2) They are most numerous kept in the province of Ontario and in the states of Ohio, New York, Pennsylvania, Illinois, Wisconsin, Vermont and Kentucky, and in the order named.

X. Registration in the United States.

(1) In all, 12,350 animals have been recorded.

(2) Of these, 3,650 are rams, 8,587 are ewes and 113 are wethers.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Southdowns are the smallest of the medium-wooled breeds that have been imported into America, but

(2) Owing to their compact form, they weigh remarkably well in proportion to their size.

II. Adaptability.

(1) Southdowns are best adapted to undulating, rolling or broken and hilly lands with a dry soil and a short, fine herbage, but

(2) They can also be grown in good form in arable sections where the land is fairly productive.

III. Early maturing qualities.

(1) In early maturing qualities Southdowns stand in the very first rank.

(2) When well fed, the lambs are in condition for market at almost any age.

IV. Grazing qualities.

(1) Their small size and active habits pre-eminently adapt them to grazing on hilly and broken land, and

(2) Their tidy, thick fleece of short wool enables them to endure well, exposure to storms.

V. Feeding qualities.

(1) These also have placed them in the front rank.

(2) Their tidy, neat forms constitute them easy keepers and they are sufficiently docile to submit to the necessary restraints of feeding.

VI. Quality of the meat.

(1) In this respect also they stand in the front rank.

(2) The mutton is tender, juicy, fine grained, of good flavor and yields a large proportion of good meat, both to live and dead weights.

VII. Value in crossing and grading.

(1) They have been used more than any other breed in the origination of various other pure dark-faced breeds.

(2) They may with much advantage be crossed upon grades of the various long-wooled breeds, upon large-bodied common ewes and upon grade Merinos, where a more compact and easy keeping mutton sheep is wanted.

VIII. Breeding qualities.

(1) The breeding qualities of Southdowns are good, but not more than average.

(2) They are not distinguished for the number of couplets which they produce.

IX. Wool production.

(1) The fleece is finer than that of any of the other British breeds imported into America, and it has something more of closure.

(2) It is dense, however, and would probably average five to seven pounds unwashed.

STANDARD POINTS.

I. The following is the standard of excellence adopted by the American Southdown Breeders' Association:

	POINTS.
(1) <i>Head</i> —Medium in size and hornless; fine, carried well up, the forehead or face well covered with wool, especially between the ears and on the cheeks, and in the ewe slightly dished	5
(2) <i>Lips and Under Jaw</i> —Fine and thin	1
(3) <i>Ears</i> —Rather small, tolerably wide apart, covered with fine hair, and carried with a lively back and forth movement	2
(4) <i>Eyes</i> —Full and bright	3

	POINTS.
(5) <i>Face</i> —A uniform tint of brown or gray, or mouse color	3
(6) <i>Neck</i> —Short, fine at the head, but nicely tapering, and broad and straight on top at the shoulders	4
(7) <i>Shoulders</i> —Broad and full, smoothly joining the neck with the back	5
(8) <i>Breast</i> —Wide, deep and projecting well forward, the forelegs standing wide apart	5
(9) <i>Back and Loin</i> —Broad and straight from shoulders to rump	7
(10) <i>Ribs</i> —Well arched, extending far backward, the last projecting more than the others	6
(11) <i>Rump</i> —Broad, square and full, with tail well set up	6
(12) <i>Hips</i> —Wide, with little space between them and last ribs	6
(13) <i>Thighs</i> —Full and well let down in the twist, the legs standing well apart	6
(14) <i>Limbs</i> —Short and fine in bone and in color to agree with face	3
(15) <i>Forelegs</i> —Well woolled and carrying mutton to the knee, but free from meat below	2
(16) <i>Hind Legs</i> —Well filled with mutton and woolled to the hocks, neat and clean below	2
(17) <i>Belly</i> —Straight and well covered with wool, the flank extending so as to form a line parallel with the back or top line	5
(18) <i>Fleece</i> —Compact, the whole body well covered with moderately long and close wool, white in color and carrying some yolk	12
(19) <i>Form</i> —Throughout smooth and symmetrical, with no coarseness in any part	9
(20) <i>General Appearance</i> —Spirited and attractive, with a determined look and proud and firm step, indicating constitutional vigor and thorough breeding	8
Perfection	100

II. Additional remarks.

(1) A good Southdown furnishes in its form the true ideal type of the mutton sheep.

(2) It is admirably proportioned and of perfect symmetry, but

(3) Lack of size and lack of weight in the fleece to some extent interfere with its more general distribution.

LECTURE NO. 8.

TUNIS SHEEP—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Tunis sheep, as the name would indicate, came originally from Tunis, in Northern Africa.

(1) In their native home they are what may be termed a mountain or semi-mountain breed.

(2) They feed upon the ranges southward to the desert and eastward to Algeria.

II. Origin of the breed.

(1) Their earliest origin is lost in the obscurity of a distant past.

(2) They fed upon those ranges before the commencement of the Christian era.

III. When imported into the United States.

(1) The first and only importation was made, it has been claimed, in 1799.

(2) In that year a few specimens were shipped to the United States by or through Gen. William Eaton, who was then United States consul at Tunis.

(3) Only one male and one female survived the voyage, and these are the progenitors of all the Tunis sheep now found in the United States.

IV. Progress in the United States.

(1) The original pair were placed on the farm of Judge Richard Peters near Philadelphia.

(2) They and their grades multiplied until the neighboring counties were well stocked with them.

V. Hindrances to rapid extension.

(1) The dominance of the fine wool interests operated against the rapid extension of the breed southward, and

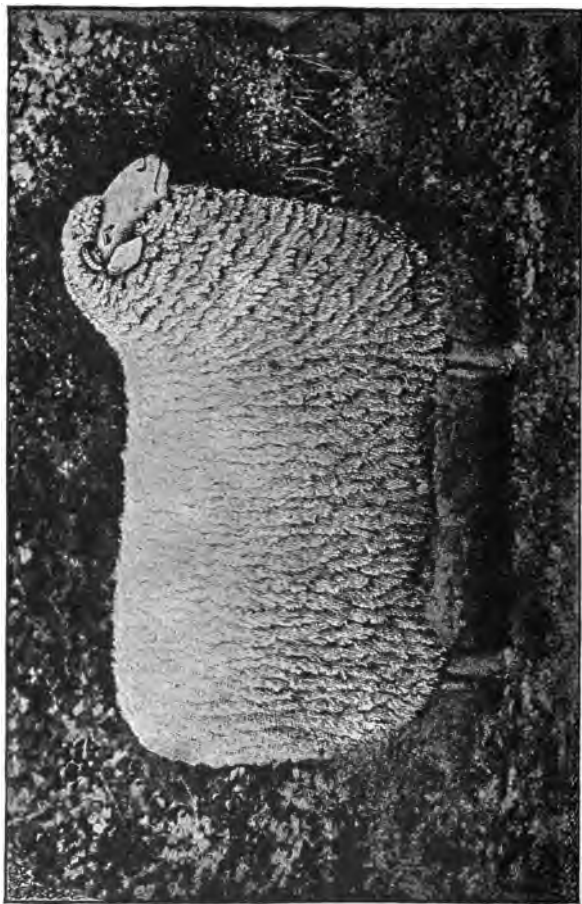


Fig. 31. Typical Tunis Ram

(2) The advent of the Down breeds hindered their extension northward.

VI. Introduction into the South.

(1) It is said they were introduced into Georgia early in the century and some flocks were early established in Virginia and the Carolinas.

(2) These were kept with satisfactory results until they were almost annihilated by the Civil war.

VII. Re-establishment of the breed.

(1) Their continued existence was made known to the general public by an exhibit made at the World's Fair, held at Chicago in 1893.

(2) This exhibit attracted the attention of Charles Rountree of Yountsville, Ind., who visited the Carolinas in 1894 and purchased a small flock for his Indiana farm.

(3) They were selected from what some have claimed was the only surviving flock bred pure at that time in the United States.

VIII. Organization.

(1) An association was organized in the interests of the breed in 1896, with headquarters in Indiana.

(2) Records are also being kept.

IX. Distribution in the United States.

(1) The number of pure flocks in the United States is probably less than a score.

(2) These are centered in Indiana and South Carolina, but they are extending southward.

X. Registration in the United States.

(1) Only a few hundred individuals have yet been recorded, but

(2) The number is rapidly increasing.

LEADING CHARACTERISTICS.

I. Relative size.

(1) In size, the Tunis sheep are not far different from the Dorset, and in general outline they have some resemblance, but the Dorsets are considerably heavier.

(2) The average weight of the matured rams in good form may be put at about 180 pounds and of matured ewes at about 135 pounds.

II. Adaptability.

(1) Because of their great hardihood the Tunis sheep are adapted to conditions where breeds other than the Merino would fail.

(2) They seem to have much ability to withstand the heat of a warm climate, hence they will probably spread southward rather than northward, where the field is much more occupied with other breeds.

(3) Their habit of breeding at almost any season desired emphasizes such adaptation.

III. Early maturing qualities.

(1) These are of the best, since the lambs can be rapidly pushed along for the market.

(2) This property should prove especially valuable under southern conditions, where winter lambs could be grazed much of the time on pastures grown for the purpose.

IV. Grazing qualities.

(1) These are excellent, since they are active foragers and like the Merino will consume a great variety of plants.

(2) They take kindly to the native grasses of the south, including those that infest the corn and cotton fields.

V. Feeding qualities.

(1) These are good, since they can be fed for market at almost any age.

(2) Their value in fattening under the folding system has not apparently been proved, but there would seem to be no reasons why they should not do well under such a system.

(3) It is also claimed that the carcass dresses profitably on the block.

VI. Quality of the meat.

(1) The quality of the meat is said to be of the very best.

(2) The fat is blended with the lean, rather than laid on externally and internally, and the flavor of the meat has been highly praised.

VII. Value in crossing and grading.

(1) When crossed upon the various Down breeds they put their stamp upon the progeny, thus showing their great prepotency.

(2) The cross upon the Merino, pure or graded, is said to improve the mutton qualities, and that upon native stocks in the south results in marked improvement in the entire animal.

VIII. Breeding qualities.

- (1) Like the Dorsets, Tunis sheep are prolific.
- (2) They not only produce many couplets, but in some instances they breed twice a year.

IX. Wool production.

- (1) The wool would seem to be not very dissimilar to that of the Dorset in quantity and quality.
- (2) The average fleece may be put at about seven and one-half pounds unwashed.

X. Compared with Southdowns.

- (1) The Tunis sheep are larger and more rangy than the Southdowns, are ahead of the latter in adaptation to warm climates, have better breeding qualities and produce a heavier fleece.
- (2) The Southdowns have a somewhat more perfect mutton form, probably keep more easily and dress even better on the block.
- (3) In other essential characteristics they do not greatly differ.

STANDARD POINTS.

I. The following is the scale of points adopted by the American Tunis Sheep Breeders' Association:

	POINTS.
(1) <i>Blood</i> —Imported from Tunis or a perfect line of ancestors extending back to the flock owned and bred by Judge Richard Peters of Pennsylvania	20
(2) <i>Constitution</i> —Healthful countenance, lively look, head erect, deep chest, ribs well arched, round body with good length, strong, straight back, muscles fine and firm	15
(3) <i>Fleece</i> —Medium length, medium quality, medium quantity, color tintured with gray, never pure white, evenness throughout	10
(4) <i>Covering</i> —Body and neck well covered with wool, legs bare or slightly covered, face free of wool and covered with fine hair	10
(5) <i>Form</i> —Body straight, broad and well proportioned, small bone; breast, wide and prominent in front; tail, the little end should be docked, leaving the fleshy part fan shape or tapering, three to six inches broad, four to six inches long and well covered with wool	12

	POINTS
(6) <i>Head</i> —Small and hornless, or nearly so, tapering to end of nose; face and nose clean; in color, brown and white; ears broad, pendulous and covered with fine hair, in color brown to light fawn	10
(7) <i>Neck</i> —Medium in length, well placed on shoulders, small and tapering	5
(8) <i>Legs</i> —Short; color, brown and white (slightly woolled below the knee not objectionable)	6
(9) <i>Size</i> —In fair condition; when fully matured, rams should weigh 150 pounds and upward, ewes 120 pounds and upward	6
(10) <i>General Appearance</i> —Good carriage, head well up, quick, elastic movements showing symmetry of form and uniformity of character throughout	6
Perfection	100

II. Compared with Southdowns.

(1) Tunis sheep are larger, though perhaps not heavier, and are more rangy and somewhat longer in the limbs.

(2) The ears are longer and droop, and the tail is much broader.

(3) The head and legs are not quite so well covered, the wool is somewhat longer and coarser, and the fleece a little heavier.

III. Peculiarities of the tail.

(1) At birth the tail has much loose skin extending from the base for a considerable distance downward.

(2) Unless when cut close while the animal is young the space thus furnished fills with a fatty substance to the width of three to four inches.

(3) It will then weigh from three to six pounds, according to the condition of the sheep.

(4) The Tunis breed is not to be confounded with various other races of fat-tailed sheep found in the old world.

LECTURE NO. 9.

DORSET HORN SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. The Dorsets are an ancient breed of sheep, which, in large numbers, inhabited certain of the midland and southeastern counties of England during previous centuries.

(1) They had substantially the same characteristics, but some minor differences existed, largely due to variations of climate and food.

(2) In nearly all of those districts their identity has been obliterated through crossing with other breeds.

II. The central home of the breed at present is in Dorsetshire and Somersetshire, where they have been bred from time immemorial.

(1) The leading flocks in Dorset are found in the south and west with Dorchester as a center, and in the isle of Purbeck.

(2) In Somerset it is claimed that they are more numerous than in Dorset and are somewhat larger in frame.

III. The original sheep of Dorset and Somerset compared.

(1) The sheep of Dorset were rather small and light of carcass, black of nose and lip, wide of horn, light and low in the shoulders, long but not coarse of limb, and ragged in coat, but they were broad and somewhat deep of loin.

(2) The Somerset Dorsets were larger and more lank in form, had pink noses, longer wool, and produced larger lambs.

IV. Breeding characteristics of the original Dorsets.



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Fig. 32. Typical Dorset Ewe

(1) There is evidence to show that for at least 200 years past it was customary with many to breed them so as to drop lambs in the early autumn, and

(2) In many instances they have been bred twice a year, like the sheep of some warm climates.

V. The improvement of the breed.

(1) But little was done for the improvement of the breed until near the middle of the century.

(2) They did not receive much encouragement from the agricultural societies, and were not recognized as a distinct breed at the Royal Agricultural Society's show until 1862.

(3) The improvement of the breed was brought about by careful selecting, judicious mating and improved food, and without drawing upon alien blood.

VI. The improvers of Dorsets.

(1) No one name stands out pre-eminently as an improver of Dorsets, but the first distinguished in this line was Richard Seymour of Bradpole.

(2) During recent years many breeders have been zealous in this work.

VII. Period of retrogression.

(1) During the first half of the century, Dorsets were at first superseded by Merinos, and to a far greater extent by Southdowns.

(2) They were also much crossed upon by Southdowns and Leicesters, insomuch that

(3) At one time fears were entertained in some quarters for the preservation of the breed, but they are rapidly regaining lost ground.

VIII. Distribution in Britain.

(1) Outside of Dorset and Somerset, Dorsets are most numerous in Devon and the Isle of Wight, but

(2) During recent years small flocks have been established in other counties of England, and in Scotland and Ireland.

(3) Prior to 1885 they were very largely confined to the counties of Dorset and Somerset.

IX. Distribution in other countries.

(1) They were first imported into Canada in 1885 by E. Stanford of Markham, Ont.

(2) They were first introduced into the United States from Hamilton, Ont., by William Daley of Lockport, N. Y., in 1887.

(3) The first direct importation was made from Britain by A. Thayer, Hoosick Falls, N. Y., and E. F. Bowditch of Massachusetts, in 1887.

(4) They were introduced into France in 1890.

X. Organizations.

(1) Associations to promote the interests of the breed have been established both in England and in the United States.

(2) The American Dorset Horn Association was established in 1891.

(3) The American Continental Dorset Club was established in 1897.

XI. Distribution in the United States and Canada.

(1) Dorsets are now being recorded from 27 states and from several of the provinces of Canada.

(2) In the United States they are found most numerous in New York, Pennsylvania, Ohio, Massachusetts, Vermont and Connecticut, and probably in the order named.

XII. Registration in the United States.

(1) The two American associations have registered 10,738 animals.

(2) Of these a small percentage only are duplicates.

LEADING CHARACTERISTICS.

I. Relative size.

(1) In size the Dorsets are larger than the Southdowns, but do not weigh so well in proportion.

(2) The size has, however, been much improved during recent years.

(3) The average weight of matured rams in fair flesh is about 215 pounds and of matured ewes 165 pounds.

II. Adaptability.

(1) They have a semi-mountain character which well adapts them to grassy slopes, plains and hills of moderate elevation, and yet

(2) They can be reared in fine form on arable land, and even on land not sufficiently drained.

(3) For the production of "winter lambs," that is, unweaned lambs which can be marketed in the winter and early spring, they are unrivalled.

III. Early maturing qualities.

(1) They stand in the front rank in early maturing qualities.

(2) The lambs especially attain heavy weights at an early age.

IV. Grazing qualities.

(1) Their grazing qualities are excellent, as they are quick in movement and are possessed of good staying powers. and

(2) They will eat coarser herbage than some of the other breeds.

V. Feeding qualities.

(1) Owing to their docility they stand the confinement of folding and housing well.

(2) When sufficiently well fed the aged dams are ready for the market almost as soon as the lambs which they suckle.

VI. Quality of the meat.

(1) The meat is tender, good and well flavored where the pasture is suitable, and it has a fair proportion of lean, but

(2) The proportion of dead meat to the live weight is not quite equal to that obtained from the Southdown.

VII. Value in crossing and grading.

(1) Dorsets answer better for being crossed upon than for crossing for mutton uses, as

(2) Horns in mutton sheep are not desirable, but

(3) In producing a class of cross bred or grade ewes possessed of the propensity to breed early, they are of great value.

VIII. Breeding qualities.

(1) These are of the very first order.

(2) They may be mated in the spring, breed regularly, and will in some instances breed twice a year.

(3) It is claimed that they produce from 130 to 180 per cent of lambs, and the dams are good nurses and great milkers.

IX. Wool production.

(1) It has been estimated that the mature sheep will shear on an average from six to eight pounds unwashed wool and the lambs from two and one-half to three pounds.

(2) In fineness it is next to that of the Tunis.

X. Compared with Southdowns.

(1) Dorsets lead considerably in size, are more prolific and better milkers, are superior for crossing when early lambs are sought, and grow a heavier fleece.

(2) The Southdowns have more of general adaptability, mature even more quickly, and fatten and kill somewhat better.

PRINCIPAL POINTS.

I. In the absence of an authorized scale of points, the following is submitted:

(1) *Size*—Medium for the breed, but the size is of course affected by environment.

(2) *General Outline*—Inclining to long and not too compact or massive.

(3) *Head*—Large rather than small, tapering toward the muzzle and longer than in some breeds, and covered with a tuft of wool of medium length.

(a) Forehead, broad and covered with a tuft of wool of medium length.

(b) Nose, frequently slightly Roman, more especially in the males.

(c) Poll, wide.

(d) Horns in both sexes, small and flat in the female, but considerably longer, stronger and more angular in the male and curved spirally outward from the side of the head.

(e) Ears, fairly long and fine and inclining a little outward.

(4) *Neck*—Not less than medium in length and general development.

(a) Not strong at the junction with the head, nor of more than average development at the junction with the shoulders.

(b) Depression on the top is to be guarded against.

(5) *Back*—Fairly wide, straight and level.

(a) Withers fairly wide and not elevated.

(b) Loin, broad and long.

(6) *Forequarters*—Of nearly equal development with the hindquarters, but not quite so well filled out.

(a) Shoulders of fair size and moderately rounded out above, with increasing fullness in center and lower portion.

(b) Chest, capacious.

(c) Breast, wide, deep and at least moderately well filled.

(d) Brisket, rounded and of much width.

(e) Forearm, inclining to long and tapering.

(7) *Body*—Inclining to long in the barrel and capacious.

(a) Ribs of medium closeness and fairly round and deep in their spring.

(b) Crops, undue depression is to be guarded against.

(c) Foreflank, full.

(d) Hindflank, low and moderately full.

(e) Deficient heart girth is to be guarded against.

(f) Underline, nearly straight.

(8) *Hindquarters*—Long, wide, deep and full.

(a) Hips, large, of at least medium fullness and depth, and long.

(b) Crupper, creased above the spinal column.

(c) Thighs, full, inclining to long and tapering.

(d) Buttock, wide and square.

(e) Twist, full and placed medium low.

(9) *Legs*—Medium in length, size and strength, and straight.

(a) They should stand firmly and well apart.

(b) In color they are white.

(10) *Fleece*—Evenly distributed over the body, coming but a short distance forward on the cheek and down to the knee and hock.

(a) The wool inclines to fine, is about three and one-half inches long when grown, and not more than medium in density.

(b) It is beautifully white and has a fair amount of yolk.

(c) The skin should be flesh-colored.

II. General appearance.

(1) The Dorset is a somewhat long-bodied sheep of fair symmetry and style, and

(2) It is active, easy and graceful in its movements.

III. Compared with the Southdown.

(1) The Dorset is considerably larger and more rangy in form and limb.

(2) It is longer in the head, neck and body, not so plump relatively in the breast, shoulder and crops, nor quite so round in the spring of rib.

(3) The wool covers less of the head and legs, is longer, a little coarser and considerably less dense.

(4) The head and legs are white, while those of the Southdown are some shade of brown.

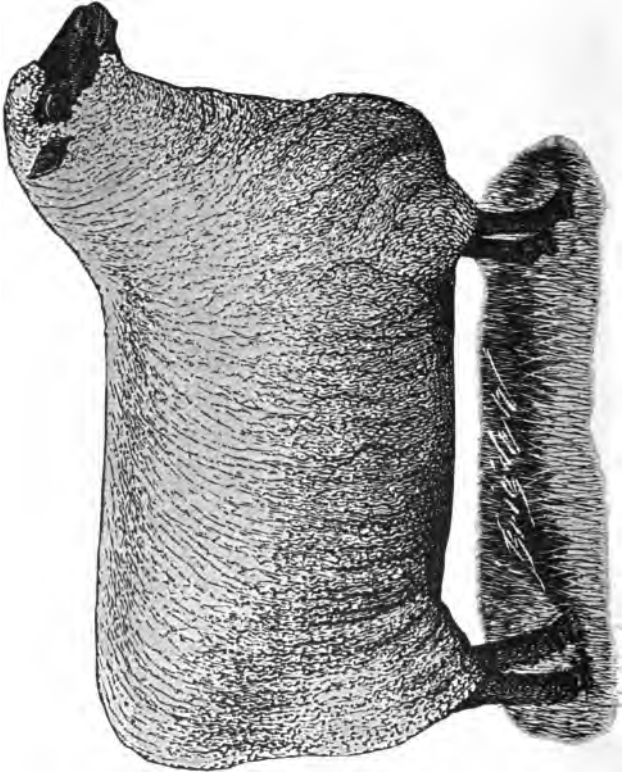


Fig. 33. Typical Shropshire Ewe

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LECTURE NO. 10.

SHROPSHIRE SHEEP—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Shropshire is a sheep composite in character, the improvement of which has been chiefly effected during the present century.

(1) The original breed from which they are descended were chiefly known as "Morfe Common" sheep, from an extensive tract in Shropshire on which they fed, but

(2) Some are the descendants of sheep that fed on Cannock Chase in Staffordshire and on Whittington Heath, and

(3) The blood of all these strains now mingles in the improved Shropshire.

II. How improvement has been effected.

(1) Improvement has been effected very largely through crossing and selection, and also through better care and food.

(2) The blood of the Southdown, Cotswold and Leicester breeds has all been freely used in their improvement, but not in a regular or settled order, although

(3) Since the middle of the century but little outside blood has been used, and for many years none at all.

III. The breed while yet unimproved.

(1) Originally the Shropshires were horned, had black or brown or spotted faces, and were an active and hardy race.

(2) They produced about two and one-half pounds of wool per fleece, and about forty pounds of mutton to the carcass.

IV. The improvers of Shropshires.

(1) Improvement was effected by a number of breeders working simultaneously and not always in the same lines, hence

(2) The lack of uniformity in types which characterized the breed for many years after improvement had commenced.

V. Recognition at exhibitions.

(1) Shropshires first gained marked distinction at the Royal Society's show at Gloucester in 1853 and again at Salisbury in 1857.

(2) They were first recognized in the prize lists of the said show in 1859.

(3) In 1884, at the Royal show at Shrewsbury, 875 Shropshires were on exhibition, or more than twice as many as were brought forward of all the other breeds combined.

VI. Distribution of Shropshires in Britain.

(1) While the central home of the breed is Shropshire, they are now bred numerously in more than half the counties of England.

(2) They are also bred in considerable numbers in several counties in Scotland and Ireland.

VII. Distribution in other countries.

(1) Although not imported into the United States until 1855, they are now more numerous than any of the other breeds, and are also more generally distributed over the Union.

(2) Excellent flocks have also been established in Canada, more especially in Ontario, where also they are more numerous than any of the other pure breeds.

(3) And they are found in considerable numbers in various countries in Europe and the continent of South America.

VIII. Organizations.

(1) Shropshires are protected by breeders' associations both in England and America, and registration is carefully maintained in both countries.

(2) The American Shropshire Registry Association was organized in 1884, and at least two other associations somewhat local in character have since been organized.

(3) The first volume of the American Shropshire Sheep Record was published in 1889.

IX. Distribution of Shropshires in the United States and Canada.

(1) They are now being recorded from 50 states and provinces.

(2) The leading centers of distribution are probably Ontario, New York, Michigan, Indiana and Wisconsin, but

(3) They are relatively quite numerous in all the central states.

X. Registration in the United States.

- (1) The American Shropshire Association has recorded 128,623 animals.
- (2) About 40 per cent of these are males.

LEADING CHARACTERISTICS.

I. Relative size.

(1) In size Shropshires are considerably larger than the Southdowns and they are of heavier build than the Dorsets, but are not so large as the other Down breeds.

(2) In weight they are not a little ahead of the Southdowns, and they are probably heavier also than the Dorsets.

II. Adaptability.

(1) Their wide diffusion and increasing popularity are sure indications of their general adaptability.

(2) They are best adapted, however, to surfaces not violently undulating, and to sections where a fair proportion of the land is arable.

III. Early maturing qualities.

(1) They mature quite as early probably as any other breed except the Southdown.

(2) This property in the Shropshire is peculiarly valuable, owing to the extent to which they are used in crossing.

IV. Grazing qualities.

(1) The grazing qualities of the Shropshire are good, but it requires better pastures than the Southdown and Merino.

(2) Its docility also adapts it well to folding.

V. Feeding qualities.

(1) Shropshires feed very well under suitable conditions.

(2) The closeness of the fleece enables them to be fattened where the shelter is very moderate, and they give an excellent return for the food fed.

VI. Quality of the meat.

(1) The quality of the meat is excellent, about equal to that of the Southdown, while the quantity furnished is considerably more, and

(2) Like the Southdown they dress well in proportion to the live weight.

VII. Value in crossing and grading.

(1) For crossing upon Merino grades and common stocks generally, the Shropshires have shown themselves as possessed of especial value.

(2) They also cross excellently upon the grades of the long wool varieties, and for that purpose they are now being used more extensively in the United States than any other variety.

VIII. Breeding qualities.

(1) The claim has been made that Shropshires are the most prolific of all the breeds, but this claim is certainly extravagant.

(2) It would be correct, however, to say that in this respect they are at least average.

IX. Wool production.

(1) The average fleece from a good flock should clip nine to ten pounds unwashed in the ewes and twelve to fifteen pounds in the rams.

(2) The wool should be of medium length, between the Southdown and Hampshire Down in fineness, and it should be even and close.

X. Compared with Southdowns.

(1) The Shropshires are considerably larger, require better grazing lands, produce larger progeny when crossed on other stocks and a heavier fleece of wool.

(2) The Southdowns are something ahead in maturity and it may be in easy keeping qualities, and

(3) In other essential characteristics they are not far different.

STANDARD POINTS.

I. The following is the standard scale of points of excellence adopted by the American Shropshire Association :

POINTS.

- (1) *Constitution*—Constitution and quality indicated by the form of body; deep and large in breast and through the heart; back wide, straight and well covered with lean meat or muscle; wide and full in the thigh, deep in flank; skin thick but soft and of a pink color; prominent, brilliant eyes and healthy countenance 25

POINTS.

- Objections*—Deficiency of brisket, light around the heart, fish back, pointed shoulders, tucked in flank, pale or too dark skin objectionable.
- (2) *Size*—In fair condition when fully matured, rams should weigh not less than 225 pounds and ewes not less than 175 pounds . . . 10
Objections—Rams in full flesh 175 pounds or under, ewes in full flesh 150 pounds or under.
- (3) *General Appearance*—General appearance and character; good carriage; head well up; elastic movement, showing great symmetry of form and uniformity of character throughout . . . 10
Objections—Head drooping, low in neck, sluggish movement.
- (4) *Body*—Well proportioned; medium bones; great scale and length; well finished hindquarters; thick back and loins; twist deep and full, standing with legs well placed outside; breast wide and extending well forward . . . 15
Objections—Too fine bones, short body, deficient in twist, legs close together, light in brisket.
- (5) *Head*—Head short and broad; wide between the ears and between the eyes; short from top of head to tip of nose; ears short, of medium size; eyes expressive; head should be well covered with wool to a point even with the eyes, without any appearance of horns; color of face dark brown . . . 10
Objections—Horns disqualify; white face disqualifies; head with prominent bones; bare on top of head.
- (6) *Neck*—Medium length, good bone and muscular development; and especially with the rams, heavier toward the shoulders, set high up and rising from that point to back of head . . . 5
- (7) *Legs and Feet*—Broad, short, straight; well set apart; well shaped; color dark brown and well woolled to the knees . . . 10
- (8) *Fleece*—Body, head, belly and legs to knees well covered with fleece of even length and quality; scrotum of rams well covered with wool . . . 10
- (9) *Quality of Wool*—Medium such as is known in our markets as “medium delaine” and “half combing wool,” strong, fine, lustrous fiber, without tendency to mat or felt together, and at one

	POINTS.
year's growth not less than three and one-half inches in length	5
Perfection	100

II. Additional points.

- (1) The nose of the rams should be broad and wrinkled.
- (2) The ears of both sexes of an even dark color, and neither erect nor drooping.
- (3) A soft black color of face and legs is preferred to dark brown, and
- (4) Black and gray wool anywhere and coarse wool on the hips are objectionable.

III. Compared with Southdowns.

- (1) Shropshires are larger and longer in body and carry a heavier fleece.
- (2) The head has a more complete covering of wool and the wool everywhere is longer, but not so fine, and
- (3) The color of the face and legs is considerably darker.

LECTURE NO. II.

CHEVIOT SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. A narrow strip of country along the River Tweed and amid the Cheviot hills formed the original home of this breed of sheep.

(1) Amid the hills and valleys of this semi-mountain range they have pastured for long centuries.

(2) Neither history nor tradition has given the slightest clue as to the origin of the Cheviots which may be accepted as satisfactory.

II. Their former characters.

(1) Originally they were small, light boned and light in the breast and forequarter.

(2) The wool was finer than at present, but it was also much shorter.

(3) They were then, as now, a singularly hardy breed.

III. How improvement was effected.

(1) Improvement in breeding flocks has been secured entirely by selection, improved keep in winter and intelligent management.

(2) The blood of both the long and medium woolled breeds has frequently been introduced, but to no purpose, except with the drafts held for disposal, as a lessened hardihood is the invariable result.

IV. Exposure in their native home.

(1) During the whole of the year Cheviots are exposed without any shelter save that which their native glens afford.

(2) They are fed some hay in time of deep snow, and the ewes get turnips at the lambing season.

(3) The terrible winter storms which occur at intervals sometimes occasion severe losses.



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Fig. 34. Typical Cheviot Ewe

V. Disposal of Cheviots.

- (1) They are seldom finished on the lands on which they are reared, but
- (2) Are sold at various ages to be finished on lowland pastures.

VI. Distribution in Britain.

- (1) They are now found as far south as Cornwall, and have been extended to the extreme north of Scotland, but only on elevations found suitable for them.
- (2) On many of the hills they have entirely superseded the Black-faced Highland breed.

VII. Distribution in other countries.

- (1) They were first imported into Delaware county, N. Y., in 1838, by Robert Young, but
- (2) Their diffusion was very slow and gradual until subsequently to 1880.
- (3) A number of flocks have also been established in the Dominion of Canada.

VIII. Organization.

- (1) The American Cheviot Sheep Breeders' Association was organized at Hartwick, N. Y., in 1891.
- (2) The National Cheviot Sheep Society was organized at Indianapolis, Ind., in 1894.
- (3) Records are being kept by both associations.

IX. Distribution in the United States.

- (1) Flocks of more or less size exist in nearly all the states east of the Mississippi river and north of the Ohio and Potomac.
- (2) They are most numerous in the states of New York and Indiana and in the order named.
- (3) Strange to say, they do not appear to have been introduced into the range country.

X. Registration in the United States.

- (1) There have been recorded in all by the two American associations 5,743 animals.
- (2) Of these about one-fourth are males and the remainder females.

LEADING CHARACTERISTICS.

I. Relative size.

- (1) In size they are about equal to the Dorsets, which to some extent they resemble in shape, but they carry a longer fleece.

(2) The average weight of the rams in good flesh is about 200 to 220 pounds and of the ewes 150 to 160 pounds.

II. Adaptability.

(1) They are well adapted to hilly lands, where hardihood is an important essential, but they can also be successfully reared on undulating surfaces.

(2) They should do well on the lower ranges of the Alleghenies and the Rocky mountains, more especially the former.

III. Early maturing qualities.

(1) These are not so good as in some breeds, owing to the manner of rearing which the conditions necessitate, but

(2) In this respect they have been improved during recent years.

IV. Grazing qualities.

(1) These are superlatively good, but

(2) Cheviots do better on short, fine herbage than on coarse grasses and heath.

V. Feeding qualities.

(1) Being a semi-mountain breed they would not submit so well to close confinement as some other breeds, hence

(2) They are more commonly finished on pastures and by folding.

VI. Quality of the meat.

(1) The mutton is very good, but

(2) It is not quite equal to the Southdown in delicacy, nor to the mountain breeds in flavor.

VII. Value in crossing and grading.

(1) There is probably not very wide room for using this breed for crossing in rich, arable sections, but

(2) On exposed ranges and in bleak situations they could doubtless oftentimes be used with much advantage.

VIII. Breeding qualities.

(1) Cheviots breed with much regularity, but

(2) They are not particularly noted as producers of couplets.

IX. Wool production.

(1) The average fleece should weigh eight to ten pounds.

(2) The wool is coarser now than formerly, and is not always even in quality.

X. Compared with Southdowns.

(1) Cheviots are larger and more rangy and even more hardy, are adapted to even a wider range of conditions, are better for crossing where hardihood is sought and carry a heavier fleece of wool.

(2) The Southdowns mature earlier, feed more quickly, dress somewhat better on the block, and are superior for crossing where improvement in mutton qualities is sought.

STANDARD POINTS.

I. The following is the scale of points drawn up by the American Cheviot Sheep Breeders' Association:

	POINTS.
(1) <i>Blood</i> —Pure bred from one or more importations from Scotland	10
(2) <i>Constitution and Quality</i> —Indicated by the form of body; deep and large in breast and through the heart; back, wide and straight and well covered with lean meat; wide and full in the thigh; deep in flank; skin soft and pink in color; prominent eyes, healthful countenance	25
(3) <i>Size</i> —In fair condition, when fully matured, rams should weigh not less than 175 pounds; ewes 135 pounds when bred in America. Imported stock: Rams 125 to 150 pounds, ewes 100 to 125 pounds	10
(4) <i>General Appearance</i> —Good carriage; head well up; elastic movement; showing symmetry of form and uniformity of character throughout	10
(5) <i>Body</i> —Well proportioned; small bone; great scale and length; well finished hindquarters; thick back and loins; standing with legs placed well outside; breast wide and prominent in front; tail wide and well covered with wool	10
(6) <i>Head</i> —Long and broad and wide between the eyes; ears of medium length and erect; face white, but small black spots on head and ears are not objectionable; straight or Roman nose; end of nose dark, but never smut nose on top with black or brown; no tuft of wool on head	10
(7) <i>Neck</i> —Medium in length; thick and well placed on the shoulders	5

	POINTS.
(8) <i>Legs and Feet</i> —Short legs, well set apart; color white; no wool on legs; fore legs round, hind legs flat and straight; hoofs black and well shaped	5
(9) <i>Covering</i> —Body and belly well covered with fleece of medium length and good quality	10
(10) <i>Quality of Wool</i> —Medium; such as is known in the market as half combing wool	5
Perfection	100

II. Compared with Southdowns.

(1) Cheviots are larger in size and considerably longer in body.

(2) They are longer and stronger in limb and are less compact in the coupling.

(3) They are longer in the head and ears, are more bare of wool on head and legs, and these are white in color.

(4) The wool is longer, but less fine in character, and not so evenly distributed.

LECTURE NO. 12.

SUFFOLK DOWN SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. Suffolk sheep are a composite breed, whose central home is in the counties of Suffolk, Norfolk, Cambridge and Essex in England.

(1) They are essentially the outcome of the crossing of Southdown rams upon ewes of the old Norfolk breed.

(2) These crosses continued to a greater or lesser extent until the middle of the present century.

II. The old Norfolks may be described as follows:

(1) Their bodies and limbs were long and robust.

(2) They carried their heads erect, and both sexes had horns.

(3) The fleece was fine, soft and silky, and weighed about two and one-half pounds.

(4) The color of the face and feet was a jet black.

(5) They were hardy and prolific, but shy, and their active habits admirably adapted them for grazing on scant pastures.

III. The improvers of Suffolks.

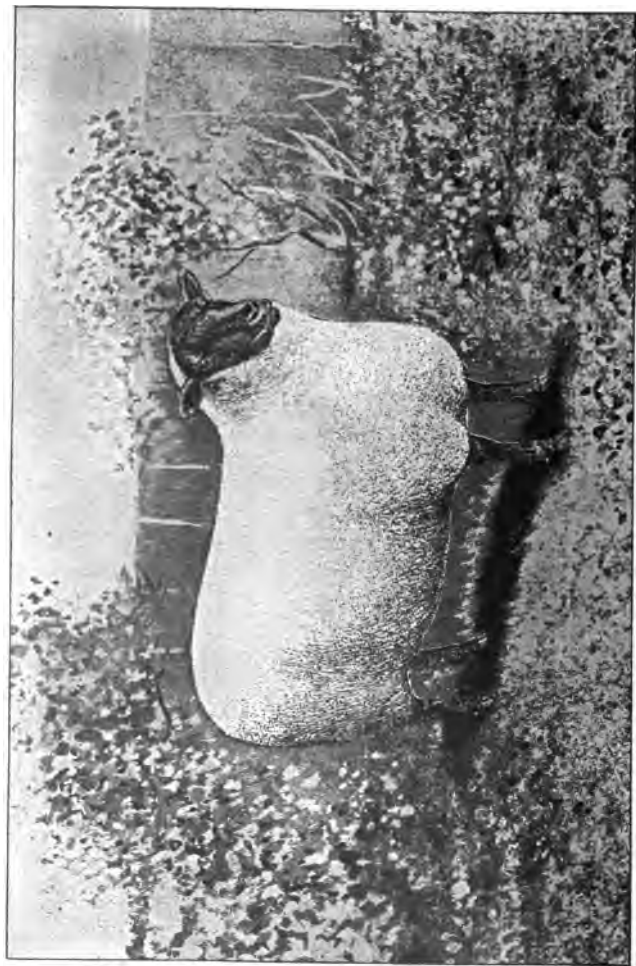
(1) The work of improvement was carried on simultaneously by a number of breeders in the counties of Suffolk, Norfolk, Cambridge and Essex.

(2) George Dobito of Ludgate, Suffolk, was the most zealous and distinguished of the early improvers.

(3) Some of the existing flocks date back to the earlier years of the century.

IV. Suffolks on exhibition.

(1) They were first called "Suffolks" in 1859 when classes were created for them at the show held by the Suffolk Agricultural Association.



(238)

Fig. 35. Typical Suffolk Down Ewe

(2) In 1883, 1884 and 1885, they were awarded first honors in competition with all other short woolled breeds at the shows held during those respective years, by the Royal Agricultural Society.

(3) For many years past they have also made a creditable exhibit at the Smithfield Club and other fat stock shows.

V. Distribution of Suffolks in other countries.

(1) Suffolks have been exported, but only during recent years, to several countries in Europe, to South America, Canada and the United States.

(2) The first importation of Suffolks to Canada was made by B. W. Sewell, Frederickton, N. B., in 1888.

(3) The first importation was made to the United States by M. B. Streeter, Brooklyn, N. Y., in 1888.

VI. Suffolk sheep societies.

(1) The Suffolk Sheep Society of England was established in 1886.

(2) The American Suffolk Flock Registry Association was established in 1892, with headquarters at Des Moines, Ia.

(3) Registration is being given careful attention by both associations.

VII. Distribution in the United States and Canada.

(1) The chief center of distribution in the United States is Iowa, and in Canada, Ontario, but

(2) There are now flocks of Suffolks in several of the states.

VIII. Registration in the United States.

(1) Owing to the recent introduction of Suffolks into the United States the number entered for record is not yet numerous.

(2) The initial volume of the American Suffolk Flock Book has not yet appeared.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Suffolks are larger than the Southdowns, Dorsets and Shropshires, and nearly as large as the Hampshires and Oxfords, but

(2) They are not quite so heavy as the two last named breeds.

II. Adaptability.

(1) The Suffolks are well adapted to farms with some good arable land, and a considerable range of pastures, not over luxuriant.

(2) Their active habits and hardihood make them good rustlers.

(3) The average weight of rams in good thrift is about 230 pounds and of ewes 185 pounds.

III. Early maturing qualities.

(1) The strong infusion of Southdown blood has given the Suffolks good maturing qualities, and

(2) The good nursing qualities of the dams favor the same in a marked degree in the lambs.

IV. Grazing qualities.

(1) The Suffolks are capital grazers, but they want undulating rather than violently hilly land.

(2) They should graze well on ranges not mountainous in character.

V. Feeding qualities.

(1) They feed fairly well.

(2) Their inclination to ranginess in form is somewhat against highest feeding qualities.

VI. Quality of the meat.

(1) In 1797, Arthur Young describes the mutton as having no superior in texture, grain or flavor.

(2) These fine qualities are retained, and there have been added to them juiciness and a greatly increased proportion of meat with fat and lean intermixed.

VII. Value in crossing and grading.

(1) They have proved themselves very valuable for crossing upon the Merino grades of South America, and they should be specially valuable for this purpose on ranges of moderate elevation.

(2) They cross particularly well on grades of the blocky type.

VIII. Breeding qualities.

(1) These are exceptionally good, hence in this respect they are not far behind the Dorsets, and

(2) The dams make exceptionally good nurses.

IX. Wool production.

(1) In wool production, they shear a little more than the Southdowns, and the wool is about as fine as that of the Shropshires or nearly so.

(2) The average fleece may be put at about seven to nine pounds unwashed.

X. Compared with Southdowns.

(1) Suffolks are much larger, are adapted to more intensive conditions and relatively better pastures, are better average milkers and produce a heavier fleece.

(2) Southdowns mature somewhat earlier, fatten more quickly and dress better on the block.

(3) In other essential characteristics they are much alike.

STANDARD POINTS.

I. The following scale of points was drawn up for Suffolks by the American Flock Registry Association in 1892:

	POINTS.
(1) <i>General Appearance</i> —Pleasing outline; good carriage and symmetry of development	7
(2) <i>General Form</i> —Large in size; inclined to long in body; medium strength of bone; somewhat cylindrical in shape, and straight above, below and in the rear	15
(3) <i>Head</i> —Medium in size, inclining to long, and covered with fine, short, glossy black hair to the junction with the neck; a small quantity of clean, white wool on the forehead is not objected to; muzzle moderately fine, especially in ewes; eyes bright and full; ears of medium length and fineness	10
(4) <i>Neck</i> —Moderately long and well set, and blending well with the body, with some crest in the rams	5
(5) <i>Forequarters</i> —Well developed; breast, wide, deep and full; brisket broad; chest, capacious, with good heart girth; shoulders, broad, oblique and well filled in the neck-vein and crops; withers, broad; arm, well developed	15
(6) <i>Barrel</i> —Roomy; back, straight, broad and well fleshed throughout its entire length; ribs, well sprung and moderately deep; fore and hind flanks full and deep	15

	POINTS.
(7) <i>Hindquarters</i> —Long, deep and full; tail, broad and well set up; buttock, broad; twist, full; thigh, broad and full	15
(8) <i>Feet and Legs</i> —Straight, of medium length with flat bone; bare of wool below the knee and hock; glossy black in color and set well apart	8
(9) <i>Fleece</i> —Moderately short, with close, fine lustrous fiber and without tendency to mat or felt together, or to shade off into dark or gray wool or hair, especially about the neck and tail. The fleece should cover the whole body except the head and the legs below the knee and hock; and the skin underneath it should be fair, soft and of a pink color	10
Perfection	100

II. Compared with Southdowns.

(1) The Suffolks are considerably larger and heavier, and are longer in body and limb.

(2) The head is longer and much more bare of wool; the ear is larger and the face and legs are much blacker, and

(3) The wool is a little longer, but not quite so dense.

LECTURE NO. 13.

HAMPSHIRE DOWN SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Hampshire Down is the outcome of a cross of the improved Southdown upon the old Wiltshire horned sheep and the old Berkshire Knot.

(1) The old Wiltshires were the largest of the fine woolled breeds of England, but they were lank and ungainly in body; they were white or mottled in the face and legs, and both sexes had horns.

(2) The old Berkshires were strong, active and vigorous; one type only had horns, and both types generally had dark faces and feet.

(3) Both the Wiltshire and Berkshire breeds had long and strong limbs, both had Roman noses, and both were very hardy, but were hard feeders and slow in maturing.

II. How improvement was effected.

(1) In very many instances Southdown rams were used upon the native ewes, but sometimes the native rams were used upon Southdown ewes.

(2) A careful system of selection followed, and after a time crossbred rams of the progeny were chosen.

(3) In this way a breed was formed which retained the size and hardihood of the old native breed, and the good feeding qualities of the Southdown.

III. When improvement was effected.

(1) It commenced about the beginning of the century, or even prior to that date, but

(2) The perfecting of the breed belongs rather to the last than to the first half of the century.

IV. There was lack of uniformity for a time in the Improved Hampshire Downs, owing

(1) To the varied nature of the methods of improvement adopted, and



(244) **Fig. 36. Typical Hampshire Down Ewe**

(2) To the variations in soils in different sections where they were reared, yet notwithstanding,

(3) The Improved Hampshires have been brought to a high state of uniformity.

V. The improvers of Hampshire Downs.

(1) Early in the century many farmers engaged in the work without concerted action, and hence without uniformity in plan, but

(2) About 1834 or 1835, William Humphrey of Oak Ash, Newbury, commenced a work which resulted in great improvement to the breed, and later

(3) Improvement was carried still further by Mr. Lawrence of Bulbridge, and Mr. Morrison of Fonthill.

VI. Distribution of Hampshire Downs.

(1) Although this breed originated in the counties of Hampshire, Wiltshire and Berkshire, they are now found to some extent in Dorset, Sussex, Surrey and other counties of England.

(2) Prior to the Civil war they were introduced in considerable numbers into the southern states, but the flocks were practically annihilated during that contest.

(3) The first importation to the northern states was made by Thomas Messenger of Great Neck, L. I., N. Y., in 1855, but importations were infrequent until within the last two or three decades.

VII. Organizations.

(1) Associations in the interests of the breed have been formed both in Great Britain and the United States.

(2) The Hampshire Down Breeders' Association of America was organized in 1889.

(3) The first volume of the Hampshire Down Flock Record was issued in 1890.

VIII. Distribution in the United States.

(1) Hampshires are now distributed in nineteen states of the Union and small flocks exist in Ontario and Quebec.

(2) They are most numerous in the states of New York, Michigan, Pennsylvania and Ohio and in the order named.

(3) Distribution has not yet been extended to the southern and southwestern states.

IX. Registration in the United States.

(1) In all 7,450 animals have been recorded.

(2) Of these 2,088 are males and 5,362 females.

LEADING CHARACTERISTICS.

I. Relative size.

(1) In size the Hampshire Downs are second only to the Oxfords among the middle wool breeds, and they are a close second to them in average weight.

(2) The average weight of rams at maturity and in good flesh may be put at 250 pounds and of ewes 200 pounds.

II. Adaptability.

(1) Hampshires are admirably adapted to locations near large cities, where both arable and pasture lands are interspersed, as they furnish large lambs for the early markets, either pure or when crossed.

(2) In other words, they are best adapted to an intensive system of farming.

III. Early maturing qualities.

(1) These are excellent.

(2) They produce lambs of heavier weight at an earlier age, it is claimed, than any other breed.

IV. Grazing qualities.

(1) These are good when the pastures are not too broken, as

(2) The staying powers of the old original breeds have in a measure been retained.

V. Feeding qualities.

(1) Here also they excel, as has been amply testified by their winnings at leading fat stock shows.

(2) Hampshires may be fattened at an early age and they stand forcing well.

(3) Lambs have frequently been made to gain a pound per day from birth until marketed.

VI. Quality of the meat.

(1) The meat is juicy and tender, and ordinarily has the fat and lean well intermixed, but

(2) The proportion of the bone is larger than in some breeds.

VII. Value in crossing and grading.

(1) Hampshires are specially valuable in crossing where early and quick maturing and large-sized lambs are wanted,

and more especially where the ewes are of the compact and small order.

(2) Lambs from crossbred ewes may be made to attain much size at an early age.

VIII. Breeding qualities.

(1) These are excellent, as good milking and good breeding qualities go together.

(2) They inherit their good breeding qualities from the old original breeds.

IX. Wool production.

(1) They shear somewhat heavier fleeces than the Southdowns, averaging probably from seven to ten pounds per fleece, unwashed.

(2) The wool is of medium length, but a little coarser perhaps than Shropshire wool.

X. Compared with Southdowns.

(1) Hampshires are much larger, are more prolific and better milkers and produce a heavier fleece.

(2) Southdowns have wider adaptation, especially in their grazing qualities, and dress somewhat better on the block.

(3) In other respects they are nearly equal.

STANDARD POINTS.

I. The following is the standard of excellence drawn up by the American Hampshire Down Breeders' Association in 1890:

(1) *Head and Legs—*

(a) Head, moderately large but not coarse; well covered with wool on forehead and cheeks.

(b) Nostrils, wide.

(c) Color (head and legs), dark brown or black.

(d) Eyes, prominent and lustrous.

(e) Ears, moderately long and thin, and dark brown or black in color.

(f) Legs, well under outside of body, straight, with good size of bone; black.

(2) *Neck, Shoulders and Chest—*

(a) Neck, a regular taper from shoulders to head, without any hollow in front of shoulders, set high up on body.

(b) Shoulders, sloping, full, and not higher than the line of back and neck.

(c) Chest, deep and full in the heart place, with breast prominent and full.

(3) *Body*—

(a) Back, straight, with full spring of rib.

(b) Loin, wide and straight, without depression in front of hips.

(c) Quarters, long from hips to rump, without sloping, and deep in thigh. Broad in hips and rump with full hams. Inside of thighs full.

II. Scale of points.

	POINTS.
(1) <i>Head</i> —Size and shape, 5; eyes and ears, 3; color, 5; legs and feet, 2	15
(2) <i>Neck, Shoulders and Breast</i> —Neck, 5; shoulders, 10; chest and breast, 15	30
(3) <i>Body</i> —Back and loin, 15; ribs, 5	20
(4) <i>Quarters</i> —Length, 10; width, 10; twist, 5	25
(5) <i>Wool</i> —Forehead and cheeks, 2; belly, well covered, 3; quality, 5	10
Perfection	100

III. Compared with Southdowns.

(1) Hampshires are much larger and longer and are more rangy.

(2) Are stronger in the head, ears and limbs.

(3) Are darker in the face and legs, and

(4) Are a little longer and considerably more open in fleece.

LECTURE NO. 14.

OXFORD DOWNS—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Oxford Downs originated in a cross of Cotswold rams upon Hampshire Down ewes, and to a limited extent probably on Southdown ewes.

(1) Their cleanly cut profile, the thinner nose, the longer forelock, the longer and thinner ear, and the compact form of the body are derived from the Cotswold parent, and

(2) The dark face and legs, the comparatively close fleece and the good quality of the mutton are largely due to the Down parentage.

II. When improvement was effected.

(1) These crosses cannot be traced beyond the year 1833, and

(2) It is thought that no outside blood has been introduced since 1854.

III. How improvement was effected.

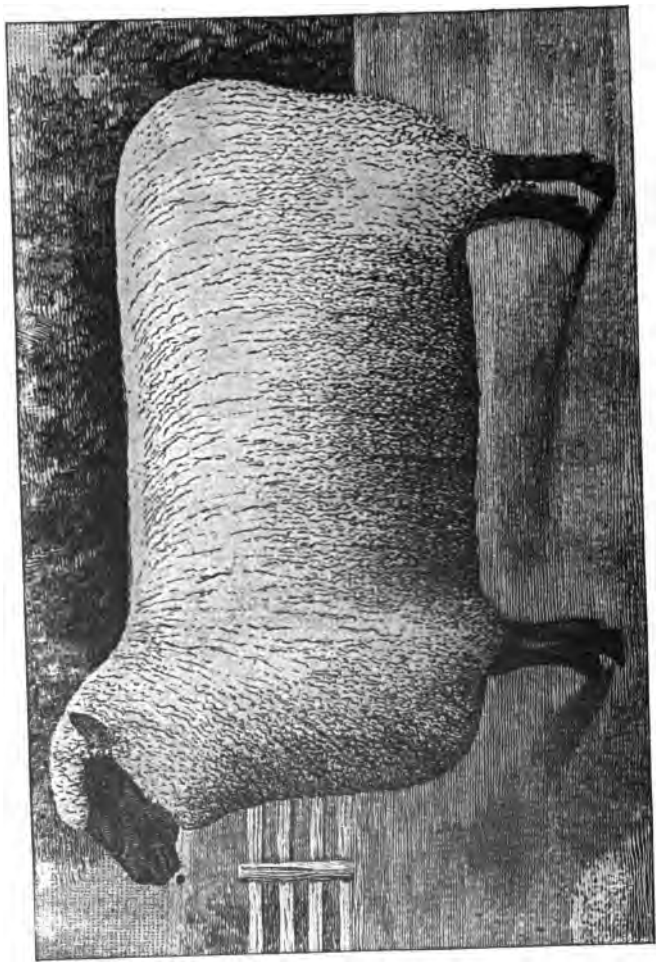
(1) Sometimes the crosses were from one parent breed and sometimes from the other, but more commonly Cotswold males were used.

(2) Those who made them at first were seeking the improvement of mutton and wool qualities rather than the establishment of a new breed.

(3) After a time the improvement secured was more than maintained, through judicious selection and mating.

IV. The leading improvers of the breed.

(1) Foremost among these is Samuel Druce of Eynsham, Oxon, Oxfordshire, who commenced the work of crossing in 1833 or 1834.



(250)

Fig. 37. Typical Oxford Down Ewe

(2) At a later period the names of William Gillett of South Leigh, J. Gillett of Brize Norton and J. Hitchman of Little Milton are prominent among the many who helped to improve the breed.

V. Recognition at exhibitions.

(1) They were first recognized as a distinct breed by the Royal Agricultural Society in 1862.

(2) For many years they were exhibited as crossbreds, and were first called Oxford Downs in 1857.

VI. Distribution of Oxford Downs.

(1) The original central home of Oxford Downs was the county of Oxford, but now they are somewhat numerous found in several of the neighboring counties.

(2) They are found in nearly every state and kingdom in Europe, in South Africa, Australia, South America, Canada and the United States.

VII. Importations to the United States and Canada.

(1) Oxford Downs were first imported to the United States in 1853 by R. S. Fay of Lynn, Mass., and William C. Rives of Virginia.

(2) Since 1880 considerable importing has been done both by the United States and Canada.

VIII. Organizations.

(1) Registration has received attention both in England and America.

(2) The American Oxford Down Sheep Record Association was organized in 1884.

IX. Distribution in the United States and Canada.

(1) Oxford Downs are distributed over thirty-one states of the Union and over nearly all the provinces of Canada.

(2) Ontario, Indiana, Illinois, New York and Wisconsin are the great centers of distribution, and probably in the order named.

X. Registration in the United States.

(1) More than 18,800 Oxford Downs have been recorded, of which nearly 8,000 are rams and the remainder ewes.

(2) The number of individuals recording is 619, of whom 142 are in Ontario.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Oxford Downs are the largest and heaviest of the Down breeds, and they are also probably heavier than the Leicesters in average weight.

(2) When in good flesh Oxford Down rams should weigh about 250 to 275 pounds at maturity and the ewes about 200 to 225 pounds.

II. Adaptability.

(1) Oxford Downs are best adapted to arable sections where the lands produce good pastures, but they will do fairly well on coarse herbage.

(2) They are better adapted to intensive conditions than to those opposite in character.

III. Early maturing qualities.

(1) These are at least average.

(2) The lambs attain heavy weights when one year old.

IV. Grazing qualities.

(1) Like the Cotswold, they graze well for so heavy a breed, but

(2) They should not be kept on rugged or broken pastures.

V. Feeding qualities.

(1) They will make good gains for a long period, owing to their great scale, but

(2) To suit the markets of to-day, they should be fattened when young.

VI. Quality of the meat.

(1) The meat, like that of all the Down breeds, ranks high.

(2) It is abundant in quantity, of medium fineness of grain and well intermixed.

VII. Value in crossing and grading.

(1) Wherever lambs are wanted of large size, good nutrition qualities and good producers of heavy fleeces of medium wool, the Oxford Downs will make a good cross.

(2) Where pastures are good they have been found to cross well upon Merinos, but not under conditions the opposite.

VIII. Breeding qualities.

- (1) These are very good.
- (2) They breed regularly, have fair prolificacy and are good milkers and nurses.

IX. Wool production.

- (1) The wool is coarser than in any of the other Down breeds, but it is also considerably heavier to the fleece.
- (2) In well kept flocks, the average fleece should weigh from ten to twelve pounds, unwashed.

X. Compared with the Southdowns.

- (1) Oxford Downs are much larger and heavier, are better adapted to intensive conditions and also for crossing when increase in size and weight of wool are wanted.
- (2) Southdowns mature more quickly, have a wider range of general adaptation and are better suited for crossing and grading when refinement in form and quality is desired.
- (3) In other essentials they are about equal.

STANDARD POINTS.

I. The following is the scale of points adopted by the American Oxford Down Record Association :

BREED TYPE OF ANIMALS.	POINTS.
(1) Form of a good general appearance, made by a well balanced conformation, free from coarseness in any part, and showing good style both at rest and in motion	15
(2) Head of moderate length and width between the ears and between the eyes, and well covered with wool over poll and down to the eyes. Color of face, an even dark gray or brown, either with or without gray spot on tip of nose	6
(3) When fully matured and in good condition, rams should weigh 250 to 350 pounds, ewes 180 to 275 pounds	5
(4) Ears medium size, not too thick and of an even brown or dark gray color	2
(5) Legs short, strong in bone, flat and of even dark gray or brown color, placed squarely under the body and well apart	2

CONSTITUTION.

(6) Large around the heart and wide and full in the chest	10
(7) The movement	5
(8) Eyes, bold, prominent and bright	4
(9) Skin, bright pink in color	3
(10) Neck strong and muscular in rams and well set on in both sexes	3

MUTTON FORM AND QUALITY.

(11) Wide and straight on top of shoulders, back, loin and rump, from base of neck to tail	15
(12) Full shoulders and thighs, well meated both inside and outside	5
(13) Flanks well filled and strong so as to make the lower lines of the body as straight as possible, and side lines straight or rather full	4
(14) The whole carcass evenly covered with good, well marbled meat	6

WOOL.

(15) Fleece of moderate length, close and of even quality, covering the whole carcass well, and free from black patches upon the body, neck or head	15
Perfection	100

II. The following additional points are submitted:

- (1) The color of the face and legs is usually a little darker than brown.
- (2) The rear portion of the cheeks is covered with wool.
- (3) The ears have but moderate erection and play.
- (4) The legs are usually darker than brown and the fore legs are round rather than flat.
- (5) The movement is at least moderately vigorous.
- (6) Eyes, at least moderately bold.
- (7) Neck, inclining to round, of medium length, not large at the junction with the head and increasing gradually in width and depth until it blends nicely with the shoulder and breast.
- (8) Shoulders and thighs, broad.
- (9) Carcass, evenly covered with meat.

III. *General Appearance*—The Oxford Down is a large, substantial and stately looking sheep,

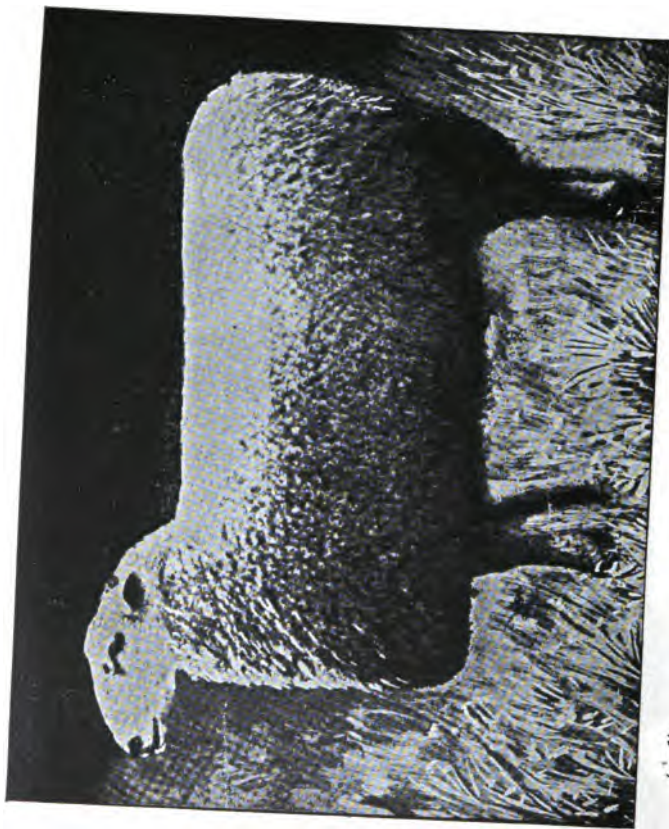
neither rangy nor yet of the most compact or low set type and covered with a heavy fleece of medium wool which stands at right angles to the body.

IV. Compared with Southdowns.

- (1) They are much larger, heavier and stronger in bone.
- (2) They have a longer head, considerably longer ears and much longer foretop of wool.
- (3) The face and legs are more of a dark brown in color, and
- (4) The fleece is very much longer, heavier and coarser.

V. Compared with Shropshires.

- (1) They are considerably stronger in body, and not so long for the width.
- (2) They are longer in head and ear and have less but longer wool on head.
- (3) The face and legs are not so dark, and
- (4) The fleece is very much heavier and coarser.



(250)

Fig. 38. Typical Leicester Ram

Single horned, bluish white
fine white
fine white

LONG WOOLED BREEDS

LECTURE NO. 15.

LEICESTER SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. The Leicester breed of sheep is so named from the county in England in which it originated.

(1) It was formerly frequently spoken of as the New Dishley breed, from the home of Robert Bakewell, its originator, who lived at Dishley Hall, near Loughboro, in Leicestershire, but

(2) It was more commonly known as the New Leicester.

II. The formation of the breed.

(1) The Improved Leicester was built upon a foundation of the old long woolled sheep of the neighborhood, commonly spoken of as the Old Dishley breed.

(2) They were large, coarse, long and thin in the carcass, had flat sides, large bones and thick, rough legs; their wool was long and coarse and they were withal slow feeders.

III. When improvement was effected.

(1) Bakewell commenced the work of improvement in 1755, or about that date, and continued it until his death.

(2) He left an animal so perfectly developed that there was left little chance for further improvement unless in the line of wool production.

IV. How improvement was effected.

(1) Bakewell invariably chose animals for breeding which possessed in the highest degree the qualities which he sought.

(2) He rendered these permanent by continued selection and in-and-in breeding.

V. Leading qualities sought by Bakewell.

- (1) Greater symmetry of form.
- (2) Improved qualities of food assimilation and fattening.
- (3) An earlier maturity.
- (4) A reduction in the proportion of bone and offal, and
- (5) Greater development in the parts most valuable on the block.

VI. Weaknesses resulting from Bakewell's methods.

- (1) Too great a delicacy of constitution.
- (2) A less degree of prolificacy.
- (3) Impaired milking qualities, and
- (4) An insufficient wool product.

VII. System of ram letting.

- (1) This system seems to have been first introduced by Bakewell.
- (2) At first he could only realize 17s. and 6d. per ram for the season, but ere long he readily secured 100 guineas for the best animals.
- (3) In 1789 he was paid 6,200 guineas for the hire of his rams.

VIII. Distribution of the breed.

- (1) Within fifty years from the establishment of the New Leicester breed it had superseded nearly all the long woolled breeds in England, or had been so mingled with them as to obliterate their former distinctions.
- (2) Years ago they were more widely distributed in other countries than any of the British breeds.
- (3) They were introduced into Virginia and New Jersey prior to the War of Independence, and later into other states, particularly New York, where for a time they became the prevailing breed, but they have not obtained an extensive foothold in the west.
- (4) They were first imported into Canada about 1800 by Rev. Mr. Toofy of Quebec, and in all the Dominion they have been used in grading to a greater extent than all the other breeds combined.

IX. The two types of Leicesters, viz., the Bakewell and the Border.

- (1) The latter are of the same general style as the Bakewell Leicester, but they are larger, though not quite so compact.

(2) They are also more prominent in the nose, have whiter faces and legs, but are more inclined to bareness on the belly.

X. Organizations.

(1) It is simply unexplainable that a breed which has performed so prominent a part in the formation of other breeds should have been so many years without organized protection in Great Britain.

(2) The American Leicester Breeders' Association was formed in 1888.

XI. Distribution in the United States and Canada.

(1) Pure bred Leicesters are now recorded from twenty-one states and provinces of Canada.

(2) In the United States they are most numerous kept in Michigan, Pennsylvania, Oregon, Nebraska, Iowa and Illinois, and in the order named.

(3) In Canada they are most numerous kept in Ontario, New Brunswick, Manitoba, Prince Edward Island and British Columbia, and in the order named.

(4) It is thought that Ontario possesses more Leicesters than all the states combined.

XII. Registration in the United States.

(1) Two volumes of the flock book have been issued and 3,486 animals are recorded, of which 958 are males and 2,528 females.

(2) Owing to their early introduction into this country the number of grades is relatively far greater in proportion to the pure breds than with the other breeds.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Leicesters are not so heavy as the Cotswolds or Lincolns, but they weigh more than any of the middle woolled breeds unless the Hampshire Down and Oxford Down.

(2) The average weight of a mature Leicester ram in good flesh may be put at 225 to 250 pounds and of a ewe at 175 to 200 pounds.

II. Adaptability.

(1) They are specially adapted to arable sections, and

(2) To climates which produce an abundance of succulent vegetation.

III. Early maturing qualities.

(1) No breed excels them in early maturing qualities or in aptitude to fatten at an early age, hence

(2) They are easy keepers, and the lambs can be marketed when young.

IV. Grazing qualities.

(1) These are only fair, as they are not particularly well adapted to "roughing it," but

(2) They are eminently adapted to folding and feeding on specially prepared pastures, as turnips and rape.

V. Feeding qualities.

(1) These are of the very best.

(2) No other breed is more docile, feeds more quickly, or gives a better return for the food fed.

VI. Quality of the meat.

(1) The meat is juicy and plentiful and the offal is light, but

(2) The proportion of fat is large, and it is laid on too much externally.

VII. Value in crossing and grading.

(1) No breed will render better service in crossing where early maturity and good fleshing and easy keeping qualities are sought, and

(2) High grade Leicesters are equally well adapted for being crossed upon by the Down breeds.

(3) Such crosses usually lessen the size somewhat, but they improve the quality of the meat.

VIII. Breeding qualities.

(1) Like the highly improved Southdowns they are not specially noted for prolificacy and high milking qualities, but

(2) When properly managed there will be no trouble from the sources named.

IX. Wool production.

(1) The fleece should average from nine to eleven pounds of unwashed wool.

(2) The wool is lustrous, and is perhaps the finest produced by the long woolled breeds.

PRINCIPAL POINTS.

I. In the absence of an authorized scale of points, the following is submitted.

(1) *Size*—Medium, with a leaning to increase rather than decrease.

(2) *General Outline*—Symmetrical, parallelogrammic and everywhere well proportioned.

(3) *Head*—Small for the size of the body, but much stronger in the rams, somewhat long and fine, tapering toward the muzzle, and Roman-nosed, especially in the Border varieties.

(a) It is snowy white when young, but becomes somewhat darker with age, and the same is true of the legs.

(b) It is usually entirely free from wool, but sometimes there is very short wool, covering a part of the forehead, which is broad, as is also the poll.

(c) Eye, prominent, with a quiet expression.

(d) Ears, thin, moderately long, and without droop.

(4) *Neck*—Short rather than long, round rather than flat, straight above, fine at the junction with the head, broad and deep at the base and carrying the head with but moderate erection.

(5) *Back*—Wide and straight from base of neck to tail-head and well covered in every part when in good flesh.

(a) Withers, broad, close and level.

(b) Loin, wide, strong and full.

(6) *Forequarters*—Fully equal in development to the hindquarters.

(a) Shoulders, splendidly rounded out from the withers and blending nicely with a full neck-vein and crops.

(b) Chest, very wide and deep.

(c) Breast, to correspond with chest in width and depth and beautifully filled and rounded.

(d) Brisket, wide, rounded and well forward.

(e) Forearm, broad, full and neatly tapering.

(7) *Barrel*—Only moderately long in the barrel and nicely rounded out.

(a) Ribs, close, coming well forward and backward and of round and deep spring.

(b) Fore and hind flanks equally low and full.

(c) Heart girth and flank girth excellent and about equal.

(d) Underline, straight.

(8) *Hindquarters*—Long, wide and deep, but sometimes there is over much narrowing toward the buttock.

(a) Hips, large, level on top with line of back and on side with barrel.

(b) Crupper, creased above the spinal column.

(c) Thighs, broad, full and nicely tapering toward hock.

(d) Buttock, square and straight.

(e) Twist, full, broad and low.

(9) *Legs*—Of moderate length and fine rather than coarse in bone, white in color, bare of wool on the lower half of the length and standing straight and wide apart.

(10) *Fleece*—The wool is of good length, glossy and of good fiber, and should cover the whole carcass save the head and legs.

(a) It hangs in fine spirals at the outer surface rather than in masses, and

(b) The skin under it inclines to thin, soft, elastic and is of a pinkish tinge.

II. *General Appearance*—The Leicester is symmetrically, evenly and plumply developed, has a massive and yet refined frame, a restful but not sluggish carriage, and is, when in good form, a beautiful animal.

LECTURE NO. 16.

LINCOLN SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. This breed has long inhabited the lowlands of Lincolnshire and to some extent other counties on the east coast of England.

(1) Their value was not recognized to any great extent beyond their native county and those adjoining it prior to 1850.

(2) Now they are found over the whole of Lincoln and Rutland, and over parts of several of the neighboring counties.

II. A century ago they were large, ungainly animals with an immense fleece of ragged, oily wool.

(1) They had thick, large necks with flabby dewlap, were forward in the shoulder, had flat ribs and deep bellies, and were inclined to lay on fat at the rumps and internally.

(2) They were covered with wool even longer than at present.

III. How improvement was effected.

(1) The old Lincolns were chiefly improved through the free use of Leicester blood and improved modes of breeding and feeding.

(2) The Leicester cross greatly improved the symmetry and the feeding qualities of the Lincolns.

IV. Recognition at the shows.

(1) The Lincolns were first recognized as a pure breed by the Royal Agricultural Society in 1862.

(2) Before that time they could only be shown in the general long woolled classes.

V. Distribution in other countries.

(1) Lincolns have found their way into Australia, New Zealand, South Africa, South America, Canada and the United States, but

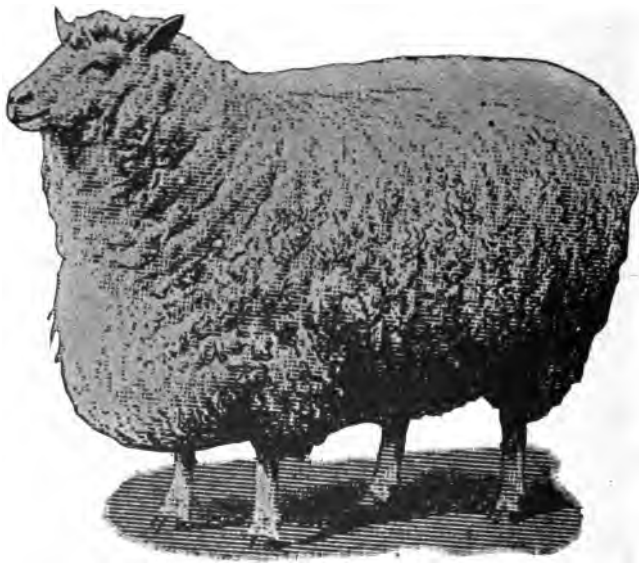


Fig. 39. Typical Lincoln Ewe

(264)

(2) They have not been so numerous introduced into Canada and the United States as many of the other breeds.

(3) They were first imported into the United States by Leonard D. Clift of Carmel, N. Y., in 1836.

VI. Organizations.

(1) The breeders of Lincolns have been somewhat slow in organizing.

(2) The National American Lincoln Sheep Breeders' Association was organized in 1891.

VII. Distribution in the United States and Canada.

(1) Lincoln sheep are distributed throughout many of the northern and middle states and in several of the provinces of Canada.

(2) They are most numerous in Michigan, Wisconsin, Illinois, Colorado and Ohio, and probably in the order named.

VIII. Registration in the United States.

(1) There have been recorded 6,215 animals by the National Lincoln Sheep Breeders' Association.

(2) Of these about 2,500 are rams and the remainder ewes.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Lincolns are considered the largest and heaviest of the domesticated breeds, and their weight is even greater relatively than their size.

(2) The average weight of matured rams in good flesh may be put at 275 to 300 pounds and of ewes at 225 to 250 pounds.

II. Adaptability.

(1) Lincolns are best adapted to arable sections where production is abundant and where the pastures are level rather than hilly.

(2) When kept in the pure form they are best adapted to an intensive cultivation, but when crossed upon Merinos the progeny do well on the ranges.

III. Early maturing qualities.

(1) Lincolns mature very quickly for their great size, but

(2) On the condition that food supplies are plentiful all the time.

IV. Grazing qualities.

- (1) Lincolns are adapted only to such grazing lands as are productive and level, or gently undulating, hence
- (2) They answer admirably where folding is desired.

V. Feeding qualities.

- (1) Lincolns rank very high in feeding qualities.
- (2) Their docility, improved breeding and vigorous digestion enable them to make good returns for the food fed.

VI. Quality of the meat.

- (1) Lincolns dress well and furnish a large proportion of good meat, but
- (2) The amount of fat is large, and the grain and flavor are not equal to those in some of the middle wool breeds.

VII. Value in crossing and grading.

- (1) Lincolns may be profitably used in crossing where increased size and greater weight of fleece are wanted, but
- (2) When so used the food supplies should be adapted to the improvements made.
- (3) A cross of the Lincoln upon the grade Merino has long been a favorite with many ranchmen in the United States, and more particularly in Australia.

VIII. Breeding qualities.

- (1) These are fair when the animals are kept in condition not too high, but
- (2) They are not more distinguished for prolificacy than the other long woolled breeds.

IX. Wool production.

- (1) In wool production, Lincolns are seldom excelled as to the weight of the fleece, which should not be less on an average in good flocks than twelve to fourteen pounds, unwashed.
- (2) In fineness of quality it is nearly the same as the Leicester, some authorities claiming that it is the finer of the two.

X. Compared with Leicesters.

- (1) The Lincolns are considerably larger and heavier than the Leicesters and carry a considerably heavier fleece.
- (2) The Leicesters have been crossed upon other breeds for their improvement to a much greater extent than the Lincolns.

(3) In other essential characteristics they resemble each other somewhat closely.

STANDARD POINTS.

I. The following is the scale of points adopted by the National Lincoln Sheep Breeders' Association:

	POINTS.
(1) <i>Constitution</i> —Body deep, back wide and straight; wide and full in the thigh, bright large eyes; skin soft and of a pink color	25
(2) <i>Size</i> —Matured rams not less than 250 pounds when in good condition, matured ewes not less than 200 pounds	10
(3) <i>Appearance</i> —Good carriage and symmetry of form	10
(4) <i>Body</i> —Well proportioned, good bone and length; broad hindquarters; legs standing well apart, breast wide and deep	15
(5) <i>Head</i> —Should be covered with wool to the ears; tuft on forehead; eyes expressive; ears fair length, dotted or mottled in color	10
(6) <i>Neck</i> —Medium length; good muscle, well set on body	5
(7) <i>Legs</i> —Broad and set well apart; good shape; color white, but some black spots do not disqualify; woolled to the knees	10
(8) <i>Fleece</i> —Of even length and quality over body; not less than eight inches long for one year's growth	10
(9) <i>Quality of Wool</i> —Rather fine; long wool; strong, lustrous fiber; no tendency to cot	5
Perfection	100

II. As the above scale of points is somewhat lacking in detail, the following additional particulars are submitted:

(1) *Size*—Medium for the breed, but varying to suit the conditions of environment.

(2) *General Outline*—Strong, broad, massive.

(3) *Head*—Medium but rather stronger than in the Leicester, and of a somewhat darker tinge.

- (a) The nose is scarcely so fine as in the Leicester.
- (b) A tuft of rather short wool is found on the upper part of the broad forehead.
- (c) Eye, large, clear, restful.
- (d) Ears, broader relatively than in the Leicester, fairly long and dotted.
- (4) *Neck*—Medium in length, but inclining to short.
- (a) Not large at the head, straight above and so enlarged as to blend perfectly at the shoulders.
- (b) Throatiness is to be avoided even in the rams.
- (5) *Back*—Straight, broad and wide to the tailhead.
- (a) The withers and loin have much width, and
- (b) The back should carry much flesh.
- (6) *Forequarters*—Of plump development, fully equal to that in the hindquarters.
- (a) Shoulders, large, fully and smoothly rounded out and well covered with flesh.
- (b) Chest, wide and cylindrical.
- (c) Breast, broad, deep, full and nicely rounded out.
- (d) Brisket, broad, rounded and well forward.
- (7) *Barrel*—Medium in length, cylindrical.
- (a) Ribs, close, well sprung from the spinal column and coming well forward and backward.
- (b) Crops, full and even with shoulder.
- (c) Fore and hind flanks, full and low.
- (d) Heart girth and flank girth, excellent and about equal.
- (e) Underline, straight.
- (8) *Hindquarters*—Long, wide, deep, plump.
- (a) Hips, large and most full in the center.
- (b) Crupper, creased.
- (c) Thighs, broad, full and well filled out downward.
- (d) Buttock, broad and square.
- (e) Twist, placed low and possessed of full development.
- (9) *Legs*—Inclining to short, wide apart, strong and straight, bare below knee and hock, and of a dull, white color, but frequently spotted.
- (10) *Fleece*—Very long, bright, strong in fiber and well distributed over the body.
- (a) It hangs in fairly large and wavy spirals, but sometimes it is flaked, and
- (b) The skin beneath it should be of a pinkish color.

III. *General Appearance*—The well furnished Lincoln in full fleece has a square-like and massive form, the long wool coming well down toward the ground.

IV. Compared with Leicesters.

(1) Lincolns are larger, stronger in bone and more massive.

(2) The head is stronger, has a tuft of short wool on the forehead, is of a darker shade of white and has somewhat broader ears.

(3) The wool is much longer, is more evenly distributed on every part, particularly the underline, is retained in good form to a greater age and usually hangs in larger and more wavy spirals.



(27c)

Fig. 40. Typical Cotswold Ram

See end

LECTURE NO. 17.

COTSWOLD SHEEP—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Cotswolds are a breed of sheep which originated amid the low calcareous hills in the eastern part of Gloucestershire, England.

(1) They were also found to some extent in Hereford and Worcester.

(2) These hills, known as the Cotswold, produced a short, nutritious herbage.

II. Cotswolds were so named

(1) From the sheds called cots or cottos, in which they were housed in time of storms, and

(2) The naked hilly ground termed weald or wold upon which they pastured.

III. The wool produced by these sheep was famous centuries ago, hence

(1) Some regard the Cotswolds as of great antiquity, but

(2) As the wool in those times was fine, others regard the Cotswolds as more modern in origin, and descended from sheep brought from lower lands.

IV. The Cotswolds before improvement.

(1) They were large, tall and rangy, and were light in the forequarters and flanks, but

(2) They produced a long and heavy fleece of coarse wool, and were withal a very rugged and hardy breed.

V. How improvement was effected.

(1) Improvement was at first secured by the introduction of the Leicester cross, which soon extended to all the flocks of the breed.

(2) This cross diminished the size and coarseness of the

old Cotswold, but it lessened the wool product, and imparted greater delicacy of constitution.

VI. When improvement was effected.

(1) Crossing Cotswolds with Leicesters was introduced about 1780 and continued until about 1820.

(2) Since 1820, selection and good management have effected still further improvement.

VII. Distribution of Cotswolds.

(1) During recent years they have been exported into France, Germany, Australia, New Zealand, Canada, the United States and other countries.

(2) They have been chiefly used in these lands with a view to increase the size and wool product of other breeds.

VIII. Introduction into the United States.

(1) About 1832 the first Cotswold ram imported into the United States was brought into New York state.

(2) Subsequent importations were infrequent until within the last quarter of a century.

(3) Some good flocks have also been established in Canada.

IX. Organizations.

(1) The interests of the breed are now protected by organizations both in Great Britain and the United States.

(2) The American Cotswold Association was organized in 1878.

X. Distribution in the United States.

(1) Cotswolds are registered from every state in the Union save Arizona, Louisiana, Texas and Florida, and from every province in Canada.

(2) Wisconsin is probably the leading center for Cotswolds in the United States and Ontario for Canada.

XI. Registration in the United States.

(1) Eight volumes of the American Cotswold Record have been issued.

(2) In all, 19,500 animals have been recorded.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Cotswolds are the largest of the domesticated breeds of sheep except Lincolns.

(2) They have quite as much scale as the former, but

stand rather higher from the ground, and are a little less in the flanks.

(3) The average weight of the mature Cotswold ram in fair flesh is about 250 to 275 pounds and of the ewe 200 to 225 pounds.

II. Adaptability.

(1) When pure, Cotswolds require good pastures, but can climb moderate elevations.

(2) When crossed with some hardy breed, as the Merinos, the progeny can feed on more rugged land and less fruitful pastures.

III. Early maturing qualities.

(1) In early maturity they are now almost if not quite equal to the Leicesters.

(2) The lambs make heavy weights at an early age.

IV. Grazing qualities.

(1) Relatively they are good grazers for a heavy breed, but

(2) No heavy breed can graze so well upon lands more rugged than mildly hilly.

V. Feeding qualities.

(1) Cotswolds feed well either when folded or in sheds, and

(2) When ill fed they are more ungainly than some other breeds.

VI. Quality of the meat.

(1) Cotswolds dress well on the block, but

(2) Much of the fat is laid on externally, and the meat is only moderately fine in the grain.

VII. Value in crossing and grading.

(1) Cotswolds cross well upon fine woolled breeds, as Merino grades, when much medium wool with improved mutton qualities are desired.

(2) They also make an excellent outcross for restoring size and wool production in certain grades where these have been unduly diminished.

VIII. Breeding qualities.

(1) These are much the same as in the other long wool breeds, but

(2) In milking qualities the Cotswolds may have some advantage, and they produce strong lambs.

IX. Wool production.

(1) The fleece is almost as heavy as that of the Lincoln, and it is coarser.

(2) In good, well kept flocks it should weigh on an average from eleven to fourteen pounds, unwashed.

X. Compared with Leicesters.

(1) Cotswolds are larger and have shown a somewhat higher adaptation for outcrossing for renovating purposes.

(2) Leicesters are better adapted for crossing to effect improvement in the form and meat producing qualities of rough stocks.

(3) In other essentials they are very similar.

STANDARD POINTS.

I. The following standard of excellence was drawn up by the American Cotswold Association:

FOR RAMS.

	POINTS.
(1) <i>Head</i> —Not too fine, moderately small and broad between the eyes and nostrils, but without a short, thick appearance, and in young animals well covered on crown with long, lustrous wool	8
(2) <i>Face</i> —Either white or slightly mixed with gray, or white dappled with brown	4
(3) <i>Nostrils</i> —Wide and expanded, nose dark.	1
(4) <i>Eyes</i> —Prominent but mild looking	2
(5) <i>Ears</i> —Broad, long, moderately thin, and covered with short hair	4
(6) <i>Collar</i> —Full from breast and shoulders, tapering gradually all the way to where the neck and head join. The neck should be short, thick and strong, indicating constitutional vigor and free from coarse and loose skin	6
(7) <i>Shoulders</i> —Broad and full, and at the same time join so gradually to the collar forward and chine backward as not to leave the least hollow in either place	8
(8) <i>Forelegs</i> —The mutton on the arm or fore thigh should come quite to the knee; leg, upright with heavy bone, being clear from superfluous skin, with wool to fetlock, and may be mixed with gray	4

POINTS.

(9) <i>Breast</i> —Broad and well forward, keeping the legs wide apart; girth or chest, full and deep	10
(10) <i>Fore Flank</i> —Quite full, not showing hollow behind the shoulder	5
(11) <i>Back and Loin</i> —Broad, flat and straight, from which the ribs must spring with a fine circular arch	12
(12) <i>Belly</i> —Straight on underline	3
(13) <i>Quarters</i> —Long and full, with mutton quite down to the hock	8
(14) <i>Hock</i> —Should stand neither in nor out	2
(15) <i>Twist or Junction Inside Thighs</i> —Deep, wide and full, which, with a broad breast, will keep the legs open and upright	5
(16) <i>Fleece</i> —The whole body should be covered with long, lustrous wool	18
Perfection	100

FOR EWES.

II. The scale of points is the same as for rams, with the differences mentioned below:

(1) *Head*—Moderately fine instead of “not too fine, moderately small,” as in the rams.

(2) *Neck*—The neck should be fine and graceful instead of “short, thick and strong, indicating constitutional vigor,” as in the rams.

(3) For neck, including collar, foreflank and belly, five, four and five points are allowed respectively, whereas for the rams “six, five and three” points are allowed.

III. *General Appearance*—The Cotswold is a stately looking animal, of rectangular outline when the fleece is well grown, massive in build and possessed of a fairly proud carriage.

IV. Compared with Leicesters.

(1) Cotswolds are considerably larger, something stronger in the leg, and are more “upstanding.”

(2) They are scarcely so wide in the chest, and are a trifle lighter in the hind flank.

(3) Their wool is longer, hangs in larger and more wavy spirals; they have a long and beautiful forelock, and they are a less pure white in the face and legs.

PART III

BREEDS OF SWINE

LECTURE NO. I.

SWINE—ORIGIN OF THE DOMESTICATED RACES.

I. Swine (*Sus scrofa*) have been known to exist in a wild state on the continents of Europe, Asia and Africa ever since the dawn of history.

(1) With certain variations they are also found wild on the continent of America and the islands of the Pacific, but

(2) They were not found in a wild condition on the continent of Australia.

II. Some zoologists have divided the various species of swine into three genera, viz :

(1) True swine, including the wild hog of Europe, Asia and Africa; the babirusa of certain East Indian islands; the Papuan hog of New Guinea, and the wood swine of South Africa.

(2) The wart bearing hogs of Africa, and

(3) The peccaries of America.

III. The various species of swine with certain minor variations possess the following points of resemblance in a greater or less degree :

(1) The head is prolonged, somewhat cone-shaped, and ends in a movable cartilaginous disc.

(2) The neck is short, strong and muscular, and the limbs are short and strong.

(3) The skin is thick and covered more or less with hair and bristles.

(4) They are fond of plants and more especially of the roots of these.

(5) They eat flesh, but do not seek to capture living animals for food.

(6) They naturally resort to watery places in which to wallow.

(7) They produce a number of individuals at one birth.

(8) Their senses of smell and hearing are peculiarly acute, and

(9) The peculiarities of voice are very similar.

IV. The various species of the true wild hog (*Sus aper*) have the following characteristics in common:

(1) They are swift of foot and fierce in disposition.

(2) The males are possessed of enormous tusks.

(3) They are more easily tamed if captured when young.

(4) When matured they are solitary in their habits.

(5) They are nocturnal in their habits of feeding.

(6) The young are longitudinally striped for a time, and

(7) The sows suckle their young for many weeks and defend them for a long period after they are weaned.

V. It is now pretty generally conceded that the domestic varieties are descended from the wild species, as

(1) The general anatomy is the same and the form and general outline bear a somewhat close resemblance.

(2) The period of gestation is the same in both; they can be successfully bred together and there is a general resemblance in the habits.

VI. Under domestication the following are some of the changes that take place:

(1) The ears become less movable, the tusks and muscles of the neck diminish in size, the back and sides lengthen, the flank and hindquarters deepen, the body becomes less capacious, the limbs grow shorter, the bristles are partially or wholly removed, and the animal becomes much less active.

(2) The stomach and intestines enlarge, they desire more food and the tendency to obesity increases.

(3) The male loses the solitary habit, the female breeds more frequently and has larger litters, and they seek their food in the day.

VII. The domesticated species have been known to revert to the wild state, as is witnessed by

herds in South America, New Zealand and other countries, but

(1) Such reversion is always slow.

(2) They do not revert to the solitary habit again, nor have they the same fierceness of disposition as the wild species.

VIII. Swine have been subjected to domestication from a very early period, and even among semi-barbarous peoples.

(1) Their flesh was held in high esteem by many of the nations of antiquity, but

(2) The Jews, ancient Egyptians and Hindoos were not allowed to eat it, nor are the followers of Mahomet.

IX. Two of the original breeds of swine in Great Britain are still represented in what is known as the Old English hog, and a breed found in the Highlands and islands of Scotland.

(1) The distinctions of the former, represented at one time by several sub-varieties, have been almost obliterated through crossing.

(a) They were mostly white in color, had large and lank bodies, a long snout, large pendant ears, long legs and coarse hair with some bristles.

(b) They were hard feeders and slow maturers, but grew to an enormous size.

(2) The latter were small, with rather erect ears and coarse bristles along the spine, were dusky brown in color and could subsist on the poorest fare.

X. The improved races of swine in England are probably nearly all descended from the Old English hog and certain foreign crosses.

(1) They have been so much crossed and intercrossed that it is difficult to classify them aright.

(2) While some of them are of world-wide reputation, others are only known within limited areas.

XI. The principal breeds of pigs in Britain at the present time are the Yorkshire with certain sub-varieties, as the Berkshire, the Tamworth, the Suffolk and the Essex.

(1) The more local breeds include the Dorset, Lincolnshire, Cheshire, Norfolk and Westmoreland.

(2) The three varieties of the Yorkshire are the Improved or Large White, the Middle White and the Small White breed.

(3) The Suffolks are bred both black and white, the former being frequently called the Black Suffolk.

XII. The originals of the swine in the United States were brought from various countries in Europe by the early settlers, but more especially from Britain.

(1) Since that time all the British breeds possessed of more than local notoriety have been introduced, and

(2) To a very limited extent only has improved blood been drawn from any other source.

XIII. The purely American varieties are the Chester White, the Poland-China, the Duroc-Jersey or Jersey Red, the Cheshire and the Victoria.

XIV. Swine may be almost regarded as cosmopolitan, as they can be reared in almost any country outside of the Arctic circles.

(1) Being gross feeders they utilize a large amount of food that would otherwise go to waste.

(2) They are more prolific than any of the other domesticated quadrupeds except the rabbit, and

(3) They are of inestimable use to the human family in the food which they furnish.

LECTURE NO. 2.

SWINE—THEIR IMPROVEMENT AND CLASSIFICATION.

I. The swine of Great Britain have been improved chiefly through crosses made with certain foreign and native breeds, better food and improved care.

II. The chief of the foreign breeds used in the improvement of the swine of Great Britain are the Chinese and the Neapolitan.

(1) The former have been used chiefly in the improvement of the white breeds, and the latter in the improvement of the black.

(2) These crosses were frequently resorted to early in the century, but they have been almost entirely discontinued during the last fifty years.

III. The Chinese breed described.

(1) They were a rather small race, with a somewhat long body and swaying back, and belly coming near the ground.

(2) They had a short head, short snout, heavy jowls, small ears standing well out from the head, short neck and short legs, and were fine in bone.

(3) In color they were white or black, or a mixture of both, white predominating.

(4) They had a remarkable tendency to fatten rapidly, but were not prolific as breeders.

IV. The Neapolitan breed described.

(1) They were a small breed with a long, cylindrical body, standing on rather short and fine limbs.

(2) They had a small head, dishing face, bony and flat forehead, very slender and rather long snout, very full jowls, small thin ears standing well forward; broad, short neck, heavy above; flat back, slightly elevated hindquarters and well developed hams and shoulders.

(3) They had a soft and fine skin and but little hair, which was of a slate or bluish plum color.

(4) Their flesh had a fair proportion of lean and was tender and well flavored.

(5) They also fattened easily and matured quickly, but were somewhat shy breeders.

V. Effects of the Chinese and Neapolitan crosses.

(1) Both crosses tended to reduce the size of the bone, to shorten the limbs and ears, to refine the hair, and to improve the maturing and fattening qualities, but

(2) These advantages were gained at the cost of decreased size, a lessened hardihood and impaired breeding qualities.

VI. Swine in the United States have been improved through crosses chiefly derived from Britain, the skillful blending of varieties and improved management.

(1) This improvement may be said to have begun in 1832, when Berkshires were first imported.

(2) Quite as much probably is owing to the skillful blending of materials at hand as to the introduction of foreign blood.

VII. The classification of the pure breeds of swine is confessedly difficult at the present time, as

(1) The evolution of some of the breeds is still going on, so that complete fixity of type in some instances has not yet been reached.

(2) These changes are chiefly caused by a change in the demands of the market, consequent upon a change in the popular taste, but to some extent they are being made to meet the tastes of breeders.

VIII. If the breeds of swine were classified on the basis of color, they would be virtually divided into three classes, viz: the white, the black and the sandy colored breeds.

(1) The white breeds are the Chester White, the Yorkshire in all its varieties, the Cheshire, the Victoria and the Suffolk.

(2) The black breeds are the Poland-China, the Berkshire and the Essex.

(3) The sandy breeds are the Tamworth and the Duroc-Jersey.

IX. Sometimes classification is based upon the bacon-producing qualities of the swine, that is, upon their ability to produce a large amount of side meat of superior quality.

(1) The distinctive bacon breeds at present in the United States are the Large Improved Yorkshire and the Tamworth.

(2) Next in adaptation for bacon production are the Chester White, the Berkshire, the Cheshire, the Duroc-Jersey, the Victoria and the Poland-China breeds, and probably in the order named, and

(3) Lowest in adaptation for the same are the Small Yorkshire, the Essex and the Suffolk breeds.

X. Classification is ordinarily based upon size, and exhibitions hitherto have only recognized but two classes, viz: the small and large breeds, but

(1) Such a classification is not sufficiently flexible, as

(2) It brings breeds into competition sometimes which vary too much in size and leading characteristics.

XI. The pure breeds of swine in America may with more propriety be classed as the large, the medium and the small breeds.

(1) The large breeds are the Chester White, the Improved Yorkshire and the Tamworth.

(2) The medium breeds are the Berkshire, the Poland-China, the Victoria, the Duroc-Jersey and the Cheshire.

(3) The small breeds are the Suffolk, the Essex and the Small Yorkshire.

XII. The aim has been in the above classification to name the breeds in the order of their size, commencing with the largest, but no classification can be submitted at present that is sure to meet with universal acceptance, owing

(1) To the lack of data available for making comparisons as to average weights.

(2) To the variations of type in some of the breeds in different localities and in the same locality, and

(3) To the transformation in some of the breeds that is still going on.

LECTURE NO. 3.

SWINE—LEADING ESSENTIALS AS TO FORM.

I. Essentials of form common to all the breeds of swine.

(1) The parallelogrammic shape, with length and depth as the most striking characteristics.

(2) Good length and depth of body for the breed and sufficient width and compactness.

(3) Levelness, evenness and smoothness of outline, and

(4) A body well supported by rather short straight limbs.

II. The points of difference not so important relatively include the following:

(1) Variations in size of carcass and of bone.

(2) Variations in the size and shape of the head.

(3) Variations in the length and thickness of the neck.

(4) Variations in the length, shape and carriage of the ear.

(5) Variations in the relative length, depth and width of the coupling.

(6) Variations in the size, length and strength of bone in the leg, and

(7) Variations in the color, length, quantity and quality of the hair.

III. The more important indications of correct form in swine, and important probably in the order given, are the following:—

(1) Constitution as indicated by chest capacity, strength of limbs and spine and an active, easy carriage.

(2) Sufficient general development for the breed, including length, depth and width.

(3) Smoothness and symmetry of outline.

(4) Good feeding qualities as indicated by the absence of coarseness in the head, limbs and hair.

(5) Capacity in the barrel as indicated by sufficient length, depth and evenness of width for the breed.

IV. Leading essentials of the boar as to form, given in detail.

(1) *Size*—Medium to large for the breed and the bone medium to strong.

(2) *Outline*—The body should be parallelogrammic in shape and compact rather than rangy, and the whole outline should have the appearance of strength and vigor.

(3) *Head*—Medium to strong in size, short rather than long, masculine and yet not coarse.

(a) *Snout*, short rather than long, and terminating in a large rather than a small disk.

(b) *Forehead*, wide.

(c) *Eye*, medium in size and clear, and not hidden with overgrowing fat.

(d) *Dish*, varying with the breed.

(e) *Poll*, broad.

(f) *Jowl*, medium, but varying much in breeds.

(g) *Ear*, medium, but varying much with the breed in size, shape and erection.

(4) *Neck*—Short rather than long, moderately wide and deep at the junction with the head, and increasingly so toward the junction with the shoulders.

(a) The shape may be spoken of as flattish oval, with a base somewhat enlarged.

(b) The rise from the poll to the withers is regular and slightly arching.

(c) The throat is nearly on a level with the brisket and belly, but varies considerably with the breed.

(d) The blending with the body is very complete, inasmuch as the lower rear base of the neck fills the whole of the space known as the breast in cattle and sheep.

(5) *Body*—Long and deep and fairly broad, but varying considerably in all these respects in the various breeds, and equally well developed in the fore and hindquarters.

(a) *Back*, level from base of neck to near the tailhead, but perceptibly arched in the long-bodied breeds, evenly and fairly broad, and with but little outward and downward slope, until the somewhat sudden descent of the side is reached.

(b) *Underline*, straight from brisket to hind flank.

(c) *Shoulder*, large, broad, deep and but slightly rounding out toward the center.

(d) *Brisket*, broad.

(e) *Chest*, well developed, as indicated by width and depth of shoulders, width of brisket and heart girth.

(f) Arm and thigh, medium to short, broad, rather flat and much tapered to the knee and hock.

(g) Side, inclining to long, but varying much with the breed; deep and straight and even from the shoulder to the han, and as thick below as above.

(h) Ribs, springing well from the backbone, then descending with a rather quick curve, and extending well down.

(i) Fore and hind flanks, low and well filled.

(j) Heart girth and flank girth, good and about equal.

(k) Hindquarters, long, deep and fairly wide.

(l) Ham, large, full, well down on the thigh, only slightly rounding toward the center and abruptly rounded toward the buttock.

(m) Tail, not coarse, and curled rather than straight.

(n) Buttock, full and slightly rounding from the tail to the twist.

(o) Twist, low, broad and full.

(6) *Legs*—Short, rather than long, with short pasterns, strong, but not coarse, straight, standing wide apart and carrying with ease the weight of the body.

(7) *Skin*—Smooth, without scales, and covered with a plentiful coat of rather strong, but not coarse hair, and without bristles.

(8) *General Appearance*—The appearance should indicate vigor, easy action and docility.

V. The sow should possess the same leading essentials as to form as the boar, with the following points of difference:

(1) She is not so large in frame, is finer in general outline and in bone, and is more roomy in the coupling.

(2) The head is smaller and considerably more refined.

(3) The neck is less massive in its development.

(4) The hair is not so coarse nor so strong, more especially on the neck, and

(5) She should have not less than twelve teats placed well apart.

VI. The style of pig bred during the recent decades.

(1) Breeders gave the preference to animals with small and short heads, short and thick necks, broad and compact bodies and fine limbs.

(2) While such preferences secured easy keeping and great fattening qualities, they produced more or less of delicacy of constitution, impaired the breeding powers and gave meat excessively fat and with but a small proportion of bacon.

VII. Modifications in form that are likely to be more sought for by breeders.

(1) The demand for leaner meat with more bacon is bringing into favor pigs with medium heads and necks, longer bodies and somewhat stronger limbs.

(2) Such animals are usually more rugged if not so quick in maturing, are better breeders, produce more bacon and a larger proportion of lean meat, and

(3) They also mature sufficiently early to be marketed at from six to eight months old, when they should weigh from 150 to 200 pounds, or even more if well fed.

(4) These modifications may be secured through crossing the short-bodied grade types by sires of the bacon breeds, or by continued selection within the breed in any of the medium types.

THE LARGE BREEDS

LECTURE NO. 4.

CHESTER WHITES—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Chester Whites originated in Chester county, Pennsylvania, from which they derive their name.

(1) They are probably the oldest of the breeds purely American in origin.

(2) The establishment and improvement of the breed has occupied a large portion of the century.

II. Materials used in forming the breed.

(1) The foundation stocks appear to have been large hogs, white in color, found in that part of Pennsylvania.

(2) These were probably descended from the Old English White breed, the ancestors of the various Yorkshire breeds.

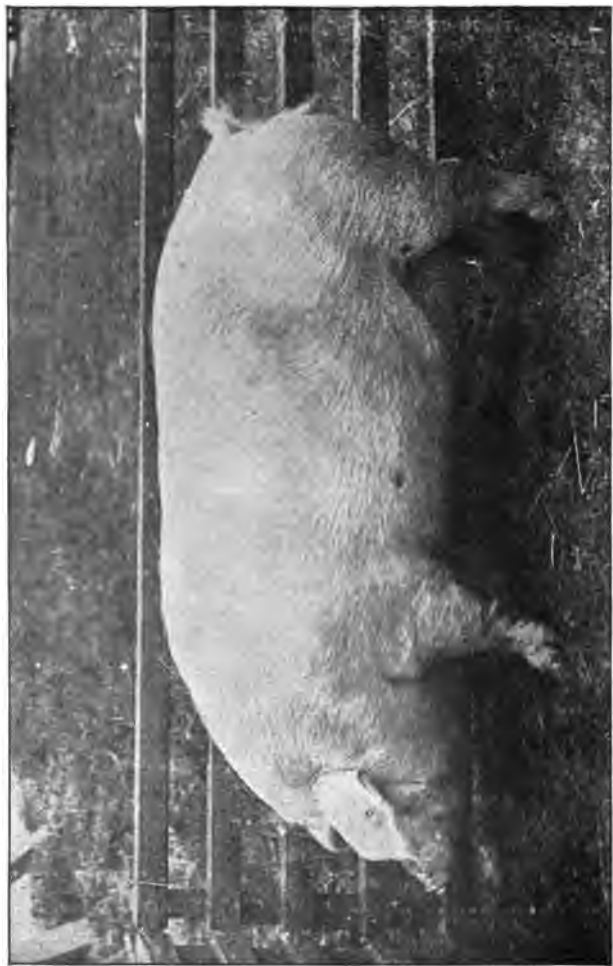
III. The work of improvement.

(1) The first impulse to the improvement of the white hogs of Chester county appears to have originated in the importation of a pair of white pigs from Bedford, England, by Capt. James Jeffries of Westchester, Pa.

(2) Improvement since that time has been more or less continuous, and has been greatly advanced by selection and more recently by breeding to a standard.

IV. The improvers of Chester Whites.

(1) A number of farmers appear to have engaged in this



(288)

Fig. 41. Typical Chester White Sow

work simultaneously, and chiefly at first with a view to securing a more suitable animal for the market.

(2) But prominent among the improvers of the breed stand the names of Thomas Wood of Chester county, Pa., and S. H. Todd of Wakeman, O.

V. Influences that have retarded distribution.

(1) When the demand for Chester Whites became greater than the supply, dishonest men sold large numbers as pure which had little in common with Chester Whites save the color, and

(2) In the West they have been found to some extent liable to mange.

VI. Modifications in the breed.

(1) Formerly Chester Whites were coarse in the head, bone and hair, had a large pendant ear, a long and coarse tail, and lacked smoothness of form.

(2) These coarse features have been eliminated in a marked degree, and they have been transformed into a smooth and symmetrical breed.

VII. Organization.

(1) At least five record associations have been organized in the interests of Chester White swine in the United States.

(2) These are the American Chester White Record Association, the National, the International, the Standard and the Ohio Improved.

VIII. Distribution in the United States and Canada.

(1) Chester White swine are fairly well distributed over the eastern, northern, central and northwestern states and many are bred in Canada.

(2) They are numerously kept in the states of Pennsylvania, Ohio, Indiana, Illinois, Iowa, and in the province of Ontario.

IX. Registration in the United States and Canada.

(1) The Standard and American Associations have recorded 37,576 animals, of which 16,672 are males and 20,904 females.

(2) In Ontario, 2,766 animals have been recorded.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Chester Whites are among the largest, if they are not indeed the largest of the American or British breeds.

(2) The size, however, has lessened since the coarseness which characterized many of the earlier specimens was eliminated.

II. Adaptability.

(1) Chester Whites have been found best suited to those portions of the United States where the climate is not too warm in summer.

(2) They also answer well for markets which call for large development at a comparatively early age.

III. Early maturing qualities.

(1) They possess these in a fair degree, but not to the same extent as some of the small breeds, as

(2) The large frame requires longer to perfect its growth.

IV. Grazing and feeding qualities.

(1) The fairly strong limbs of the Chester Whites adapt them well to summer grazing.

(2) They will feed to attain heavy weights, but do not finish so soon as some of the lighter breeds.

V. Quality of the meat.

(1) The meat is good, but contains more bone than some breeds, and

(2) The flesh is also less firm, owing probably to the relatively larger amount of fat.

VI. Value in crossing and grading.

(1) Chester Whites are valuable for crossing upon grades small and over refined.

(2) Such a cross will impart vigor, hardihood, increased prolificacy and greatly increased size.

VII. Breeding qualities.

(1) These are satisfactory, but

(2) They are probably scarcely equal to those of the other large breeds.

STANDARD POINTS.

I. The following is the scale of points as adopted by the Chester White Record Association in 1885, and revised by the same in 1888:

	POINTS
(1) <i>Head</i> —Small, broad, slightly dished	5
(2) <i>Eye</i> —Large and bright	2
(3) <i>Ear</i> —Thin, fine, drooping	2
(4) <i>Jowl</i> —Neat and full	3
(5) <i>Neck</i> —Short, full, well arched	3
(6) <i>Brisket</i> —Full and deep	3
(7) <i>Shoulder</i> —Broad and deep	6
(8) <i>Girth Around Heart</i>	10
(9) <i>Back</i> —Straight and broad	7
(10) <i>Sides</i> —Deep and full	6
(11) <i>Ribs</i> —Well sprung	7
(12) <i>Belly</i> —Wide and straight	4
(13) <i>Girth Around Flank</i>	10
(14) <i>Ham</i> —Broad, full and deep	10
(15) <i>Limbs</i> —Strong, straight and neat	7
(16) <i>Tail</i> —Tapering, and not coarse	2
(17) <i>Coat</i> —Fine and thick	3
(18) <i>Color</i> —White	1
(19) <i>Action</i> —Prompt, easy and graceful	5
(20) <i>Symmetry</i>	4
Perfection	100

II. The following is the detailed description drawn up by the Chester White Record Association:

(1) *Head*—Short; broad between the eyes, and nicely tapering from eyes to point of nose; face slightly dished; cheeks full. Objections—Head, coarse, long and narrow; face straight or too much dished; snout coarse or thick.

(2) *Eye*—Large, bright and free from overgrowing fat. Objections—Small, dim or hidden under protruding fat.

(3) *Ear*—Drooping, thin, pointing outward and forward; well proportioned to size of body. Objections—Too large and coarse; thick, lopping; lying too near the face; stiff, erect or too small.

(4) *Jowl*—Full, firm and neat; carrying fullness well back to neck and brisket. Objections—Flabby, light, thin in cheek; tucking up under the neck.

(5) *Neck*—Full, deep, short and well arched. Objections—Long, flat, lacking in fullness or depth.

(6) *Brisket*—Full, strong, well let down, extending well forward, and on line of the belly. Objections—Narrow or tucked up.

(7) *Shoulder*—Broad, deep, thickness in proportion to the side and ham, full and even on top. Objections—Thick beyond the line of side and ham, lacking in depth or width; blade prominent or extending above the line of the back.

(8) *Girth Around the Heart*—Full back of shoulders; ribs extending well down; wide and full back of forelegs. Objections—Heart girth less than flank girth, or length of body from top of the head to the root of the tail.

(9) *Back*—Broad, straight, or slightly arched, carrying width well back to the hams, and of medium length. Objections—Narrow, sinking back of shoulders; narrow across the loin; swayed, too long; sunfish shaped.

(10) *Sides*—Full, deep, carrying thickness well down and back. Objections—Too round or flat; shallow or thin at the flank.

(11) *Ribs*—Well sprung, carrying fullness well back and deep. Objections—Too flat, curve of rib too short, tucking in at bottom; sagging about loin.

(12) *Loin*—Broad, strong and full. Objections—Narrow; poorly ribbed up; weak.

(13) *Belly*—Wide and straight; width approximating that of the back. Objections—Sagging, narrow; skin coarse, harsh and thick.

(14) *Girth Around Flank*—Flank well let down and full; loin broad, strong and full measurement of flank girth equal to heart girth. Objections—Flank thin, tucked in, or cut up too high; loin narrow or weak.

(15) *Ham*—Broad, full, deep, of medium length; coming down well over the hock. Objections—Narrow, short; running too far up the back; steep at the rump.

(16) *Limbs*—Medium length; short, rather than long; set well apart, and well under; muscles full above knee and hock; bone firm, and not coarse; pasterns short, and strong; foot short. Objections—Long, slim, coarse, crooked; muscles light; pasterns long, slim, or flat; hoofs long or sprawling.

(17) *Tail*—Small, tapering, smooth; well set on. Objections—Coarse, large, too prominent at the root.

(18) *Coat*—Fine and thick. Objections—Coarse; hair too long; wiry, harsh.

(19) *Color*—White; blue spots on skin and black specks shall not argue impurity of blood.

(20) *Action*—Easy, prompt, fine and graceful. Objections—Dull, sluggish, clumsy.

(21) *Symmetry*—Uniform build, and all points in animal in proportion. *Objections*—Wanting in some points, and too much developed in others.

Serious Objections—Small growth; upright ears; small, cramped chest and crease back of shoulders so as to be readily seen. Deformed and badly crooked legs; feet broken down so that the animal walks on pastern joints and dewclaws.

III. *General Appearance*—The Chester White is a large, long bodied and yet strongly built animal, with good limbs and sufficient action.

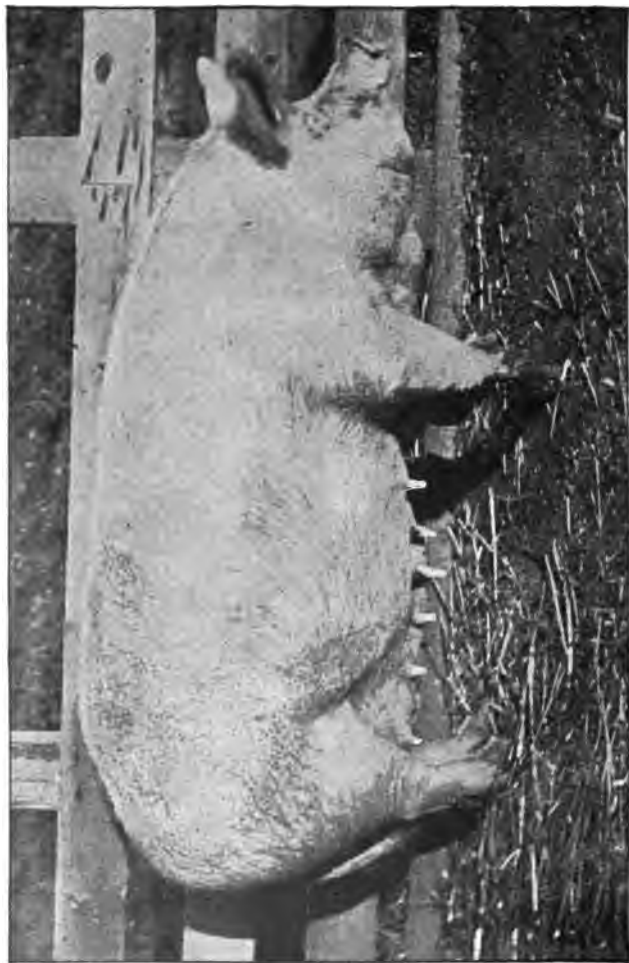


Fig. 42. Typical Large Improved Yorkshire Sow

LECTURE NO. 5.

THE IMPROVED LARGE YORKSHIRES—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. In England there are three breeds of Yorkshire pigs at the present time.

(1) These are known respectively in that country as the Improved Large Yorkshires or the Large Whites; the Middle Yorkshires or the Middle Whites; and the Small Yorkshires or the Small Whites.

(2) Only the first and last mentioned have been introduced into North America, at least in any considerable numbers.

II. Many are of the opinion that these breeds have come originally from the Old English hog, a large white animal or class of animals, inhabiting Yorkshire and other counties of England from a remote period.

(1) The Improved Large Yorkshire of to-day is the immediate descendant of the larger and coarser Yorkshire of former years.

(2) The Small Yorkshire owes its refinement in a measure to Chinese crosses, and

(3) The Middle Yorkshire is the outcome of a cross between the Large and Small Yorkshire breeds.

III. Description of the Old Yorkshire.

(1) It was long in head, in body and legs, was narrow, had very large ears, and was coarse of bone.

(2) It had a strong coat of white hair, with a few pale blue spots on the skin, but the hair on these was also white, and

(3) It was very hardy and prolific, but was slow in maturing.

IV. Improvement of the Large Yorkshires.

(1) The improvement of the Large Yorkshires commenced, it is thought, fully a century ago, but

(2) They lacked somewhat in refinement and early maturing qualities until within a comparatively recent period.

V. How improvement was effected.

(1) The White Leicester, introduced early in the century and crossed upon the Old Yorkshires, effected some improvement, and

(2) The blood of the Small Yorkshires has also had an influence in carrying the improvement still further.

VI. The improvers of the Large Yorkshires.

(1) The improvers of this breed do not seem to have worked in unison nor by system, hence there is yet a considerable lack of uniformity in the breed.

(2) A number of breeders were engaged in the work at the same time, some of them of the artisan class.

VII. Yorkshire blood widely diffused.

(1) Nearly all the white breeds of pigs in England and America are probably possessed of the elements of Yorkshire blood and also of the allied breed, the Cumberland.

(2) Some of these are virtually Yorkshire under another name.

VIII. Distribution in Britain.

(1) The chief centers for the breed in Britain are the counties of Yorkshire, Lincoln, Lancashire and Leicestershire, but

(2) During recent years they have been introduced into many of the counties of Great Britain.

IX. Distribution in other countries.

(1) The Improved Large Yorkshires have been imported in large numbers into Canada, where during recent years bacon is being extensively grown for the British market.

(2) They have also been introduced into the United States, Argentina, New Zealand, Australia and several of the countries of Europe.

(3) The first importation to the United States was made by Wilcox & Liggett of St. Paul and Minneapolis, Minn., in 1893, although

(4) Large Yorkshires have been imported to America for more than a century, but not in the improved form.

X. Organizations.

(1) The Improved Large Yorkshires are protected by registration in the United States and Canada.

(2) The American Yorkshire Association was organized in 1893.

XI. Distribution in the United States and Canada.

(1) They have already been introduced into several states and they are kept in all or nearly all the provinces of Canada.

(2) They are most numerous in Ontario, Minnesota and Iowa, and in the order named.

XII. Registration in the United States and Canada.

(1) In the Ontario record, 7,611 animals have been recorded.

(2) In the American record, 1,011 animals have been recorded, of which 426 are boars and 585 sows.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Large Improved Yorkshires are probably the longest of the breeds, but they are not so broad as the Chester Whites, and probably do not grow to such heavy weights, but

(2) They weigh remarkably well for their apparent size.

II. Adaptability.

(1) Since they are especially adapted to the production of bacon they can be kept with much advantage where bacon is to be grown for the home or the foreign market.

(2) They have special adaptation to the states of the corn belt, owing, first, to the excellent limbs which they possess; second, to their ability to rustle, and, third, to the renovating influence which they exert when crossed upon types of weakened stamina.

III. Early maturing qualities.

(1) They do not mature so quickly as the small types with fine limb, but

(2) They may be made ready for market without difficulty at the ages of six to nine months.

IV. Grazing and feeding qualities.

(1) They graze and forage admirably, as they are active and yet of gentle disposition, and

(2) They feed equally well, but must be plentifully supplied with food.

V. Quality of the meat.

(1) The quality of the meat from the Large Improved Yorkshires is unexcelled, as

(2) Their long sides produce much bacon and they have much lean in proportion to the fat.

VI. Value in crossing and grading.

(1) Wherever compact fine-boned pigs exist, the cross of the Large Improved Yorkshire will be found an excellent one, as

(2) It will at once increase the size, impart greater vigor, improve the quality of the meat, more especially the bacon, and will increase prolificacy.

VII. Breeding qualities.

(1) These are of the first order.

(2) They breed regularly, produce large litters and are excellent nurses.

VIII. Compared with Chester Whites.

(1) The Improved Yorkshire is perhaps a little less in weight, is even more active than the Chester White in foraging, is ahead of it as a first-class producer of bacon, and is also probably ahead in breeding qualities.

(2) In early maturity and in quick feeding qualities the Chester Whites may have some advantage.

(3) In value for crossing and grading they are probably not far different.

STANDARD POINTS.

I. The following is the scale of points adopted by the American Yorkshire club in 1899:

- | | |
|---|----------------|
| | POINTS. |
| (1) <i>General Outline</i> —Long and deep in proportion to width, but not massive; slightly arched in the back, symmetrical and smooth, with body firmly supported by well placed legs of medium length | 5 |
| (2) <i>Outline of Head</i> —Moderate in length and size, with lower jaw well sprung, and considerable | |

	POINTS.
dish toward snout, increasing with advancing maturity	4
(3) <i>Forehead and Poll</i> —Wide	1
(4) <i>Eye</i> —Medium size, clear and bright	1
(5) <i>Jowl</i> —Medium, not carried too far back toward neck, and not flabby	1
(6) <i>Snout</i> —Turning upward with a short curve, increasing with age	1
(7) <i>Ear</i> —Medium in size, standing well out from head, of medium erection and inclining slightly forward	1
(8) <i>Neck</i> —Of medium length, fair width and depth, rising gradually from poll to withers, muscular but not gross, evenly connecting head with body	3
(9) <i>Outline of Body</i> —Long, deep, and of medium breadth, equally wide at shoulder, side and hams; top line slightly arched, underline straight	7
(10) <i>Back</i> —Moderately broad, even in width from end to end; strong in loin, short ribs of good length	10
(11) <i>Shoulder</i> —Large, but not massive; not open above	6
(12) <i>Arm and Thigh</i> —Broad and of medium length and development	2
(13) <i>Brisket</i> —Wide and on a level with underline	3
(14) <i>Side</i> —Long, deep, straight and even from shoulder to hip	8
(15) <i>Ribs</i> —Well arched and deep	5
(16) <i>Heart and Flank Girth</i> —Good and about equal	8
(17) <i>Hindquarters</i> —Long to correspond with shoulder and side, deep, with moderate and gradual droop to tail	5
(18) <i>Ham</i> —Large, well let down on thigh and twist and rear outline somewhat rounded	10
(19) <i>Twist</i> —Well down and meaty	1
(20) <i>Tail</i> —Medium, not much inclined to curl	1
(21) <i>Legs</i> —Medium in length, strong, not coarse, and standing straight and firm	5
(22) <i>Hair</i> —Abundant, long, of medium fineness, without any bristles	4
(23) <i>Skin</i> —Smooth and white, without scales, but dark spots in skin do not disqualify	2
(24) <i>Color</i> —White on every part	1
(25) <i>Movement</i> —Active, but not restless	5
Perfection	100

II. Compared with Chester Whites.

(1) Large Improved Yorkshires are relatively longer than the Chester Whites, but are not so broad or massive.

(2) They have somewhat stronger heads, with more dish, more spring in the lower jaw, and jowls somewhat more pronounced.

(3) They have rather longer sides and not quite so much girth in proportion to the length, and

(4) They are slightly larger in limb and rather more active in movement.

LECTURE NO. 6.

TAMWORTHS—ORIGIN AND HISTORY, CHARACTERISTICS AND PRINCIPAL POINTS.

ORIGIN AND HISTORY.

I. The Tamworth pigs derive their name from Tamworth, in South Staffordshire, where they have been numerously bred for a very long term of years.

(1) They are not a composite breed, and are thought by many to be one of the oldest and purest breeds in Britain.

(2) As long ago as the beginning of the century they were noted for the large proportion of the lean meat which they produced.

II. The Tamworths before improvement.

(1) They were long of limb, long in the snout and flat in the rib.

(2) They were active, hardy, good rustlers and very prolific, but

(3) They were slow feeders and late in maturing.

III. The improvement of Tamworths.

(1) This has been almost entirely effected through selection and judicious breeding and management.

(2) It is now pretty generally conceded that the blood of other breeds has not been used to any appreciable extent in the improvement of Tamworths.

IV. When improvement was effected.

(1) They appear to have been improved to a considerable extent before the middle of the century, as they were given first honors at the Royal Agricultural Society's show, when competing with large breeds, as early as 1847, but

(2) Subsequent to this period they sank into obscurity, and were only known in some local districts.

(3) Within the last fifteen years, or, say, since 1880, much attention has been given to their improvement, owing to the demand for leaner bacon.



Fig. 43. Typical Tamworth Sow

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V. The improvers of Tamworths.

(1) As with several other breeds, no individuals have attained great distinction in improving them.

(2) Many breeders have engaged in this work from the standpoint of economy.

VI. Distribution of Tamworths.

(1) They have been bred more or less for many years in certain local centers of the Midland counties, and

(2) Now they are being brought into other counties, where, to some extent, they are displacing the more refined and delicate breeds.

(3) Classes have been made for them at all the leading shows in England, including the Smithfield.

VII. Distribution in other countries.

(1) Until quite recently they were almost unknown in foreign countries.

(2) They were first imported into the United States in 1882 by Thomas Bennett of Rossville, Ill.

(3) They have been imported into Ontario, Canada, in large numbers since 1888.

VIII. Organization.

(1) Tamworth swine are protected by registration in Great Britain, the United States and Canada.

(2) The American Tamworth Swine Record Association was organized in 1897.

IX. Distribution in the United States and Canada.

(1) Tamworth swine are now being recorded from seventeen states in the Union and from nearly all the provinces of Canada.

(2) They are most numerous at present in the states of Michigan, Illinois and Iowa.

X. Registration in the United States and Canada.

(1) In the United States there have been recorded about 600 animals.

(2) In the Canadian record, 2,972 Tamworths have been recorded.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Tamworths are at least a close second to the Large Improved Yorkshires in size, while some claim that they are even a larger breed, and

(2) Their natural vigor and hardihood are in keeping with their size.

II. Adaptability.

(1) Since Tamworths are without a superior in the production of bacon they may be advantageously reared by all who desire to produce a superior bacon product, and

(2) Since they possess much vigor and stamina they may be kept with much appropriateness in the corn growing states either pure or when crossed upon other breeds or grades not of the bacon type.

III. Early maturing qualities.

(1) Formerly they required both age and time to fatten, but in both these respects they have improved much during recent years, yet

(2) They are not equal to the small refined breeds in early maturing qualities.

IV. Grazing and feeding qualities.

(1) Since Tamworths are grand rustlers, they answer admirably where pastures are to perform an important part in pork production.

(2) They will also stand well under forced feeding and they are not hard keepers, as many imagine.

V. Quality of the meat.

(1) They are said to excel all the English breeds in the proportion of the lean to the fat, but

(2) They have more bone relatively than some of the small breeds.

VI. Value in crossing and grading.

(1) When crossed upon small, compact and over refined grade sows, they impart size, all-round development, vigor and prolificacy, and

(2) The offspring produce more and better meat and probably without increase in the cost of production.

VII. Breeding qualities.

- (1) Tamworths are unexcelled for prolificacy and
- (2) The young pigs possess the hardihood characteristic of the breed.

VIII. Compared with Chester Whites.

- (1) Tamworths are probably ahead in what may be termed flexibility in adaptation, are more active grazers, are somewhat ahead in stamina; produce a superior quality of bacon and have even greater power to produce renovation in delicate types when crossed upon them.
- (2) The Chester Whites are probably heavier at maturity, are ready for slaughter at a period somewhat earlier, and fatten more quickly when fed for pork rather than for bacon.

PRINCIPAL POINTS.

I. In the absence of a suitable scale of points, the following is submitted:

- (1) *General Outline*—The frame is long and deep rather than broad, and is well sustained by strong limbs.
- (2) *Head*—Long, but light rather than heavy, possessed of very moderate dish, and having an appearance of leanness.
 - (a) Forehead and poll, of medium width.
 - (b) Eye, medium, clear.
 - (c) Snout, long, straight and tapering, but the aim is to shorten it somewhat.
 - (d) Jowl, light rather than heavy.
 - (e) Ear, medium in size, pointing forward and fairly erect.
- (3) *Neck*—Rather long than short, and deep than wide, and rising gradually from the poll to the withers.
- (4) *Body*—Long in the coupling and deep, slightly but regularly arched above and straight below.
 - (a) Back, moderately wide, with a gradual rounding descent until the side is reached.
 - (b) Brisket, wide and on a level with the underline.
 - (c) Arm and thigh, broad but not overfull.
 - (d) Shoulder, broad, moderately full, not rough, and about equal in thickness to ham.
 - (e) Side, long, quite deep, and retaining its thickness down to the belly.
 - (f) Ribs, well arched and deep.
 - (g) Fore and hind flanks, full, and heart girth and flank girth, good and about equal.

(h) Hindquarter, long, deep, fairly full, and rounded at the buttock.

(i) Ham, large and gradually rounded off rather than square.

(j) Tail, medium strong, but not very long; and curled.

(k) Twist, low, and moderately full.

(5) *Legs*—Medium in length, moderately wide apart, straight, strong and firmly placed under the body.

(6) *Skin*—Smooth and covered plentifully with hair.

(a) Hair, not coarse and without any bristles.

(b) The color is a red or bright chestnut, often termed sandy, and it usually darkens with age.

II. *General Appearance*—In general appearance the Tamworth is long, smooth and at least fairly deep; the snout is too long to meet the popular ideal of beauty in the same; the ham has a little more of depth than the shoulder; the legs are strong and straight and the carriage is easy and active.

III. Compared with Chester Whites.

(1) Tamworths are not so massive, not so wide, deeper in proportion to the width and something more arched in the back.

(2) Their heads are lighter, snouts considerably longer, jowls something lighter, and ears smaller and more erect.

(3) Their limbs are somewhat stronger, and there are the differences in color mentioned.

IV. Compared with Improved Yorkshires.

(1) The Tamworths have the same general form and length and strength of limb, and the same easy and active carriage, but

(2) They are lighter in the head, longer and straighter in the snout, have less of down spring in the under jaw, less of size in the jowl, and more of rounding outward and downward away from the line of the back, and

(3) There are the differences in color mentioned.

THE MEDIUM BREEDS

LECTURE NO. 7.

THE BERKSHIRES—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. Berkshires are one of the oldest of the improved breeds of swine.

(1) They are so named from the county of Berkshire, England, in which they have been numerously bred, but

(2) The principal improvement of the breed was rather made in Leicestershire and Staffordshire.

II. The original Berkshires.

(1) The original Berkshire was a large animal of similar ancestry, probably, with the Tamworth.

(2) It was somewhat coarse in body, but not so coarse as the Old White hog of the northern counties, and had large pendent ears.

(3) The color was tawny, white or reddish brown, spotted with black.

III. When improvement was effected.

(1) The Berkshires were brought to a considerable degree of perfection in the last century.

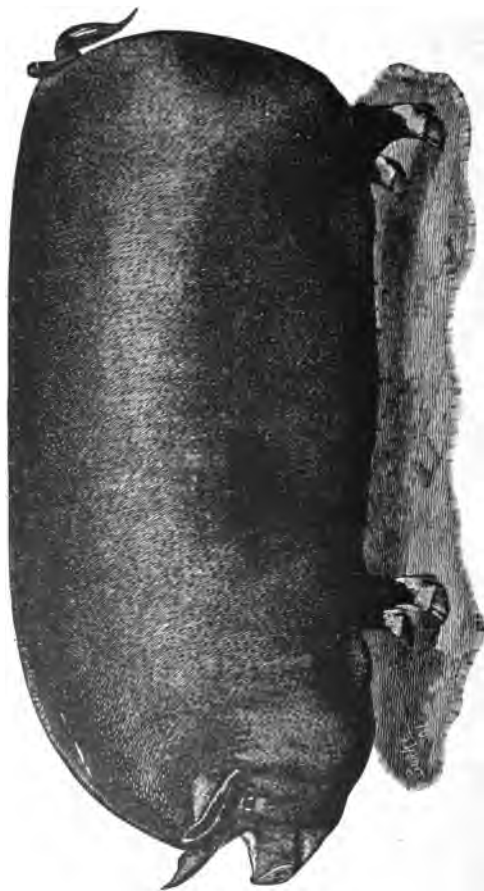
(2) From 1820 to 1830 very marked improvement was effected by Lord Barrington and others.

(3) They were first given a separate class at the Royal Agricultural Society's show in 1862.

IV. How improvement was effected.

(1) The precise steps taken at the first to improve the Berkshires are not very well known, but

(2) It is now pretty generally conceded that Chinese,



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Fig. 44. Typical Berkshire Sow

Siamese and Neapolitan crosses were used, more especially the first mentioned.

V. The early improvers of Berkshires.

(1) The very earliest of the improvers of the breed are unknown.

(2) Prominent among the early improvers stand the names of Richard Astley, of Oldstonehall, and Lord Barrington.

(3) Among the more noted of the later improvers the names of W. Hewer, Sevenhampton, Rev. H. Bailey, Swindon, and Russell Swanwick, Cirencester, may be mentioned.

VI. Two classes of Berkshires.

(1) In one of these the color is white, of which the Coleshill and Windsor breeds are examples.

(2) In the other, now more commonly known as the Berkshire, the color is black, with some white markings.

VII. Distribution in Britain.

(1) Berkshires are most numerous bred in the southwestern and midland counties of England, but they are kept in other counties in considerable numbers.

(2) They have effected great improvement on several of the native races of Ireland, and have also found their way into Scotland.

VIII. Distribution in other countries.

(1) They have been exported to foreign countries more extensively than any other British breed, more especially to the United States and Canada.

(2) They were probably imported into America in 1823, but the date usually given is 1832.

IX. Organizations.

(1) The American Berkshire Association was organized in 1875, and the National Berkshire Record Association in 1893.

(2) The recording of Berkshires in Canada commenced in 1876.

X. Distribution in the United States and Canada.

(1) Berkshires are kept in all, or nearly all, the states of the Union and in all the provinces of Canada.

(2) They are numerous kept in the province of Ontario

and in the states of Illinois, Indiana, New York, Ohio, Wisconsin, Iowa and Missouri.

XI. Registration in the United States and Canada.

(1) The American Berkshire Associations have recorded 61,327 animals, and

(2) The Canadian Swine Breeders' Association has recorded 13,135.

LEADING CHARACTERISTICS.

I. Relative size.

(1) As now bred, the Berkshires are probably larger than the Poland-Chinas, but it is well-nigh impossible to determine this question at present.

(2) The breeders are giving more attention to lengthening the form and even the limbs during recent years, but

(3) There is no little difference in size in the various types of the breed.

II. Adaptability.

(1) In what may be termed general adaptation, the Berkshires probably stand at the head of the list of the improved breeds, all the conditions considered.

(2) They may be reared in good form in almost any place adapted to swine rearing, and for pork or bacon as desired.

III. Early maturing qualities.

(1) These are excellent.

(2) They will fatten at almost any age that may be desired.

IV. Grazing and feeding qualities.

(1) Berkshires are excellent grazers, as they are possessed of limbs with a good quality of bone.

(2) As feeders, their strong digestive and assimilative powers enable them to give a maximum return in flesh for the food consumed.

V. Quality of the meat.

(1) They produce excellent pork or bacon, as the fat and lean are fairly well intermixed, and

(2) They also dress well in proportion to the live weight.

VI. Value in crossing and grading.

(1) None of the British breeds has been found more useful than the Berkshires for crossing, and none has been used so much for this purpose.

(2) They have proved of great value in refining the coarser breeds.

VII. Breeding qualities.

(1) These are at least medium, but of course they vary with the varying conditions to which they have been subjected.

(2) When not reared under enervating conditions they produce medium-large litters and rear them well.

STANDARD POINTS.

I. The following is the standard of excellence adopted by the American Berkshire association :

	POINTS.
(1) <i>Color</i> —Black, but skin and hair occasionally showing tinge of bronze or copper color, with white on feet, face, tip of tail and occasional splash on the arm	4
(2) <i>Face and Snout</i> —The latter short, broad and meaty, the former fine, well dished and broad between the eyes	9
(3) <i>Eye</i> —Very clear, rather large, dark hazel or gray	2
(4) <i>Ear</i> —Sometimes almost erect, but generally inclined forward, medium size	4
(5) <i>Jowl</i> —Full and heavy, running back well on neck	4
(6) <i>Neck</i> —Short and broad on top	4
(7) <i>Hair</i> —Fine and soft, inclined to thickness in male	3
(8) <i>Skin</i> —Smooth and pliable	4
(9) <i>Shoulder</i> —Smooth and even on top and in line with side, thick through chest	7
(10) <i>Back</i> —Broad, long and straight or slightly arched, ribs well sprung	10
(11) <i>Side</i> —Deep and well let down, straight side and bottom line	6
(12) <i>Flank</i> —Well back and low down on leg, making nearly a straight line with lower part of side	5
(13) <i>Loin</i> —Full and wide	8
(14) <i>Ham</i> —Deep and thick, extending well up on back, and holding thickness well down to hock	10

	POINTS.
(15) <i>Tail</i> —Well set up on line with back, not too fine, short or tapering	2
(16) <i>Legs and Feet</i> —Short, straight and strong, set wide apart, with hoofs nearly erect and capable of holding good weight	8
(17) <i>Size and Symmetry</i> —Size, all that is possible without loss of quality or symmetry, with good length	7
(18) <i>Style</i> —Attractive, spirited, indicative of thorough breeding and constitutional vigor	3
Perfection	100

II. The following additional points are submitted, including some suggested modifications to meet the changing requisites in form:

- (1) Disk of snout, broad.
- (2) Neck, medium to short, oval and blending evenly with the shoulder.
- (3) Brisket, wide.
- (4) Back, of medium length.
- (5) Side, medium in length and of nearly even thickness above and below.
- (6) Heart girth and flank girth, good and equal.
- (7) Legs, medium to short.

III. In general appearance Berkshires are of good size, are fairly compact in form, regular and even in outline and easy in movement.

LECTURE NO. 8.

POLAND-CHINAS—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Poland-China breed of swine originated chiefly in the counties of Warren and Butler, in the Miami valley in the state of Ohio.

(1) For many years various names were applied to animals of this breed, as: Magie, Butler County, Warren County, Miami Valley, Poland, Poland and China, Great Western, Shaker, Union Village, Dick's Creek, Gregory's Creek, and others.

(2) It was decided at the National Swine Breeders' convention held at Indianapolis in 1872 that the breed should be known as the Poland-China, and this designation is now pretty generally accepted.

II. Formation of the Poland-China breed.

(1) The foundation animals were the common stocks of the country, essentially of very mixed breeding.

(2) These were more or less crossed with the Russia, the Byfield and the Big Chinas, all of which existed in Warren county prior to 1820.

(3) The Berkshire cross, introduced in 1835 and subsequently, gave the black color, improved symmetry and increased activity, and imparted additional strength to the limbs.

(4) The Irish Grazier cross, introduced in 1839, gave improved grazing qualities and increased hardihood.

(5) No out-crosses have been used since 1845.

III. The improvers of Poland-Chinas.

(1) No one person stands out pre-eminently as the founder of the breed, though several have sought that distinction.

(2) The Shakers of Union Village, Warren county, O., are to be credited with much of the improvement made in the early years of the century.



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Fig. 45. Typical Poland-China Sow

IV. Organizations.

(1) A number of organizations have been formed in the interests of the breed, all, or nearly all, of which have adopted the same standard of points.

(2) Prominent among these are the following, viz: The Ohio Poland-China Record Company, organized 1878, at Dayton, O.; the American Poland-China Record Company, organized 1878, at Cedar Rapids, Ia.; the Central Poland-China Association, organized 1880, at Indianapolis; the Northwestern Poland-China Swine Association, organized in Washington, Kan., in 1881, and the Standard Poland-China Record Association, organized 1887, at Maryville, Mo.

V. Distribution in the United States and Canada.

(1) Poland-Chinas are probably found in every state in the Union.

(2) In the central, western and northwestern states they are more numerous kept than any other breed.

(3) They have also been introduced into several of the provinces of Canada, though not in large numbers.

VI. Registration in the United States and Canada.

(1) The associations mentioned above under Note IV have recorded approximately 350,000 animals, of which about 30 per cent are males.

(2) In Canada, 2,714 animals have been recorded.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Formerly the Poland-Chinas were larger and less refined than at the present time.

(2) Though reduced in absolute size and improved in form, they are still among the largest of the medium breeds.

II. Adaptability.

(1) They have proved well adapted to corn growing countries, hence their great popularity in the west, but

(2) They are adapted to any conditions that furnish plentiful supplies of food to produce quick growth.

III. Early maturing qualities.

(1) They possess these in a high degree, so that

(2) The inclination with Poland-Chinas now is to mature so quickly as to interfere with sufficiently large growth.

IV. Grazing and feeding qualities.

- (1) When grazing they want good pastures.
- (2) They are free feeders and easy keepers.

V. Quality of the meat.

- (1) Poland-Chinas kill well, and the meat is fine in grain and tender, but
- (2) The proportion of the fat is large and of bacon only medium.

VI. Value in crossing and grading.

- (1) Poland-Chinas cross admirably on common stocks deficient in compactness, early maturity and good feeding qualities, but
- (2) They would not be suited for crossing on the more refined breeds.

VII. Breeding qualities.

- (1) These are only fair.
- (2) The too free and prolonged use of a corn diet has had the effect in too many instances of impairing the breeding powers, unduly weakening the bone and injuring the stamina.

VIII. Compared with Berkshires.

- (1) In producing meat with but a small percentage of offal, the Poland-Chinas may have some advantage.
- (2) In stamina, rustling qualities and prolificacy, the Berkshires have probably some advantage.
- (3) In other leading essentials the two breeds resemble each other closely.

STANDARD POINTS.

I. The following is the scale of points adopted for Poland-Chinas by the National association of expert judges of swine:

	POINTS.
(1) <i>Head and Face</i>	4
(2) <i>Eyes</i>	2
(3) <i>Ears</i>	2
(4) <i>Neck</i>	2
(5) <i>Jowl</i>	2
(6) <i>Shoulders</i>	6

	POINTS.
(7) <i>Chest</i>	12
(8) <i>Back and Loin</i>	14
(9) <i>Sides and Ribs</i>	10
(10) <i>Belly and Flank</i>	4
(11) <i>Ham and Rump</i>	10
(12) <i>Feet and Legs</i>	10
(13) <i>Tail</i>	1
(14) <i>Coat</i>	3
(15) <i>Color</i>	4
(16) <i>Size</i>	5
(17) <i>Action and Style</i>	3
(18) <i>Condition</i>	2
(19) <i>Disposition</i>	2
(20) <i>Symmetry of Points</i>	2
Perfection	100

II. The following is the detailed description drawn up by the National association of expert judges of swine:

(1) *Head and Face*—Head short and wide; cheeks full; jaws broad; forehead high and wide; face short, smooth, wide between the eyes, tapering from eyes to point of nose and slightly dished, surface even and regular. Objections—Head long, narrow, coarse; forehead low and narrow or contracted, lower jaw extending beyond upper; face long, straight and narrow between the eyes; nose coarse, thick or crooked, ridgy or dished as much as a Berkshire.

(2) *Eyes*—Large, prominent, bright, lively, clear and free from wrinkled or fat surroundings. Objections—Small, dull, bloodshot, deep set or obscure; vision impaired by wrinkles, fat or other cause.

(3) *Ears*—Small, thin, soft, silky, attached to the head by a short and small knuck, tips pointing forward and slightly outward, and the forward half drooping gracefully, fully under control of animal, both of same size, position and shape. Objections—Large, straight, stiff, coarse, thick, round, long or large knuck, drooping close to face, swinging and flabby, difference in form, size or position.

(4) *Neck*—Wide, deep, short and nicely arched at top, from poll of head to shoulder. Objections—Long, narrow, thin, flat on top, not extending down to breastbone, tucked up.

(5) *Jowl*—Full, broad, deep, smooth and firm, carrying fullness back near to point of shoulders and below line of lower jaw, so that lower line will be as low as breastbone when head is carried up level. Objections—Light, flabby, thin, wedge-

shaped, deeply wrinkled, not drooping below line of lower jaw, and not carrying fullness back to shoulder and brisket.

(6) *Shoulder*—Broad, deep and full, not extending above line of back and being as wide on top as on back, carrying size down to line of belly and having good lateral width. Objections—Narrow and not same depth as body, narrow at top or bottom or extending above line of back, less than body in breadth at top or bottom portions, or lacking in lateral width, shields on boars under eight months of age, or large, heavy shields on hogs under eighteen months of age.

(7) *Chest*—Large, wide, deep, roomy, indicating plenty of room for vital organs, making a large girth just back of shoulders, the breastbone extending forward so as to show slightly in front of legs and extending in a straight line back to end of breastbone, showing a width of not less than six inches between forelegs in a large, full grown hog. Objections—Flat, pinched, narrow at top or at either end of breastbone; breastbone crooked or not extending slightly in front of forelegs.

(8) *Back and Loin*—Broad, straight, or slightly arched, carrying same width from shoulder to ham, surface even, smooth, free from lumps, crease or projections, not too long, but broad on top, indicating well sprung ribs, should not be higher at hip than at shoulder, and should fill out at junction with side so that a straight-edge placed along top of side will touch all the way from point of shoulder to point of ham; should be shorter than lower belly line. Objections—Narrow, creased back of shoulders, swayed or hollow, drooping below a straight line, humped or wrinkled, too long or sunfish shaped, loin high, narrow, depressed or humped up, surface lumpy, creased, ridgy or uneven, width at side not as much as shoulder and ham.

(9) *Sides and Ribs*—Sides full, smooth, firm and deep, carrying size down to belly and evenly from ham to shoulder, ribs long, strong, well sprung at top and bottom. Objections—Flat, thin, flabby, pinched, not as full at bottom as at top, drawn in at shoulder so as to produce a crease, or pinched and tucked up and in as it approaches the ham, lumpy or uneven surface, ribs flat or too short.

(10) *Belly and Flank*—Wide, straight and full, and dropping as low as flank at bottom of chest, back of fore leg making a straight line from fore legs to hind legs; flank full and out even with surrounding portions of body, the belly at that point dropping down on a line with lower line of chest; the loose skin connecting ham and belly being on a line even with bottom or side. Objections—Belly narrow, pinched, sagging or flabby. Flank thin, tucked up or drawn in.

(11) *Hams and Rump*—Hams broad, full, long and wide.

They should be as wide at point of the hip as at the swell of the ham. Buttocks large and full, should project beyond and come down upon and fill full between the hocks. The lower front part of the ham should be full and stifle well covered with flesh, and a gradual rounding toward the hock. Rump should have a rounding slope from the loin to root of tail; same width as back and filling out full on each side of an $\bar{1}$ above the tail. Objections—Ham narrow, short, thin, not projecting beyond, and coming down to hock; cut up too high in crotch or twist; lacking in fullness at top or bottom; lacking in width from stifle straight back, lower fore part thin and flat, straight from root of tail to hock, buttocks light, thin or flabby. Rump flat, narrow and peaked at root of tail; too steep.

(12) *Legs and Feet*—Legs medium length, straight, set well apart and squarely under body, tapering, well muscled and wide above knee and hock, below hock and knee round and tapering, capable of sustaining weight of animal in full flesh without breaking down, bone firm and of fine texture, pasterns short and nearly upright. Feet firm, short, tough and free from defects. Objections—Legs long, slim, coarse, crooked, muscles small above hock and knee, bone large, coarse, as large at foot as above knee, pasterns long, slim, crooked or weak, the hocks turned in or out of straight line, legs too close together, hoofs long, slim and weak, toes spreading or crooked or unable to bear up weight of animal without breaking down.

(13) *Tail*—Well set on, smooth, tapering and carried in a curl. Objections—Coarse, long, crooked or hanging straight down like a rope.

(14) *Coat*—Fine, straight, smooth, lying close to and covering body well, not clipped, evenly distributed over the body. Objections—Bristles, hair coarse, harsh, thin, wavy or curly, swirls, standing up, ends of hair split and brown, not evenly distributed over all the body except belly. Clipped coats should be cut 1.5 points.

(15) *Color*—Black with white in face or lower jaw, white on feet and tip of tail, and a few small, clear white spots on body not objectionable. Objections—Solid black, more than one-fourth white, sandy hairs or spots, a grizzled or speckled appearance.

(16) *Size*—Large for age and condition; boars two years old and over, if in good flesh, should weigh not less than 500 pounds. Sows, same age and condition, not less than 450 pounds. Boars eighteen months old, in good condition, not less than 400 pounds; sows 350 pounds. Boars twelve months old, not less than 300 pounds; sows 300 pounds. Boars and sows, six months, not less than 150 pounds. Other ages in proportion. Objections—Overgrowth, coarse, gangling, or hard to fatten at any age.

(17) *Action and Style*—Action vigorous, easy, quick and graceful. Style attractive, high carriage, and in males testicles should be of same size, carriage, readily seen and yet not too large. Objections—Slow, dull, clumsy, awkward, difficulty in getting up when down, low carriage, wabbling walk. In males, testicles not easily seen, not of same size or carriage, too large or only one showing.

(18) *Condition*—Healthy, skin clear of scurf, scales or sores, soft and mellow to the touch, flesh fine, evenly laid on and free from lumps or wrinkles. Hair soft and lying close to body, good feeding qualities. Objections—Unhealthy, skin scaly, wrinkly, scabby or harsh, flabbiness or lumpy flesh, too much fat for breeding. Hair harsh, dry and standing up from body, poor feeders, deafness, partial or total.

(19) *Disposition*—Quite gentle and easily handled. Objections—Cross, restless, vicious or wild.

III. *General Appearance*—In general appearance the Poland-China is compact, symmetrical, regular in outline, smooth and almost massive in build.

IV. Compared with Berkshires.

(1) The two breeds resemble each other not a little in general outline, but the Berkshires are a little longer in limb and not quite so massive in form.

(2) The Poland-Chinas have heads a little finer and less dished, snouts rather finer, ears larger and more drooping and more of evenness in the relative size of shoulder and hams.

(3) They are also less regular in their distinguishing color markings.

LECTURE NO. 9.

THE VICTORIAS—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The name Victoria has been given to two breeds or types of swine, essentially distinct in their origin.

(1) The first of these originated in the state of New York and the second in Indiana.

(2) The latter only appears to be protected by an association and by registration.

(3) Both are of medium size, although the latter is the larger of the two, and both are white in color.

II. Origin of the Victorias of New York.

(1) They originated with Col. Frank D. Curtis, Kirby Homestead, Charlton, Saratoga county, N. Y., about the year 1850.

(2) They were formed by crossing successively the native breeds of the county possessed of the Grazier strain with the Byfield, the Yorkshire and the Suffolk.

(3) They appear to bear considerable resemblance to the Suffolks, but have finer heads and with not so much of dish.

III. Origin of the Victorias of Indiana.

(1) The breed of white hogs in the United States, now more generally recognized as Victorias, originated with George Davis, Dyer, Lake county, Ind., about 1870.

(2) They are the outcome of the amalgamation of four distinct breeds, viz: The Poland-Chinas, the Chester Whites, the Berkshires and the Suffolks.

IV. Recognition in the show rings.

(1) They first appeared in the show rings in 1878, when several specimens were exhibited at the county fairs of Indiana and Illinois, and also at the Chicago Fat Stock show.



(322) **Fig. 46. Typical Victoria Sow**

(2) They were first acknowledged as a distinct breed by the Illinois state board of agriculture in 1882, and since that time they have received recognition from several other state organizations.

(3) They have been quite successful as prize winners, notably at several of the Fat Stock shows held in Chicago.

V. Organizations.

(1) The Victoria Swine Breeders' Association was organized in Indiana in 1886.

(2) The first volume of the Victoria Swine Record was published in 1887.

VI. Distribution in the United States.

(1) Victoria swine have already been recorded in a considerable number of the states of the Union.

(2) They are most numerous in Indiana, Ohio, Wisconsin, Michigan and Illinois, and probably in the order named.

VII. Registration in the United States.

(1) About 1,600 animals have been recorded or entered for record.

(2) Of these about 40 per cent are boars and 60 per cent sows.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Victorias probably come next to the Poland-Chinas in size, but they vary much in this respect in the hands of different breeders, hence

(2) In many instances they do not outweigh the Duroc-Jerseys.

II. Adaptability.

(1) It is claimed for them that they are well adapted to the field and also to the pen, but

(2) Further trial is necessary to the unreserved acceptance of the claims made in their behalf.

III. Early maturing qualities.

(1) It has been said of them that they will mature and fatten at any age, but

(2) In reference to this also, judgment should be held in suspense.

IV. Grazing and feeding qualities.

- (1) Their grazing qualities are at least average, and
- (2) Their good feeding qualities find demonstration in their winnings at the American Fat Stock shows.

V. Quality of the meat.

- (1) The quality of the meat is said to be very good, supported
- (2) By the fact that they have won high honors in the dead classes at the Fat Stock shows in Chicago.

VI. Value in crossing and grading.

- (1) For crossing and grading uses they should not as yet be of the first order, owing
- (2) To the short period which has elapsed since the breed was formed.

VII. Breeding qualities.

- (1) It is claimed that they make good mothers, and
- (2) In time we shall know this also with certainty.

VIII. Compared with Berkshires.

- (1) The Victorias are not quite so large nor so uniform, nor are they so potent.
- (2) In other essential characteristics the contrast between them is not striking.

STANDARD POINTS.

I. The following is the scale of points adopted by the Victoria Swine Breeders' Association:

	POINTS.
(1) <i>Color</i> —White, with occasional dark spots in the skin	2
(2) <i>Head</i> —Small, broad, and face dished medium	3
(3) <i>Ears</i> —Fine, pointing outward	2
(4) <i>Jowl</i> —Medium size and neat	1
(5) <i>Neck</i> —Short, full and well arched	3
(6) <i>Shoulders</i> —Broad and deep	7
(7) <i>Girth Around Heart</i>	6
(8) <i>Back</i> —Straight, broad and level	12
(9) <i>Sides</i> —Deep and full	6
(10) <i>Ribs</i> —Well sprung	7
(11) <i>Loin</i> —Broad and strong	12

	POINTS.
(12) <i>Flank</i> —Well let down	2
(13) <i>Ham</i> —Broad, full and deep, without loose fat	12
(14) <i>Tail</i> —Medium, fine and curled	2
(15) <i>Legs</i> —Fine and straight	3
(16) <i>Feet</i> —Small	3
(17) <i>Hair</i> —Fine and silky, free from bristles	3
(18) <i>Action</i> —Easy and graceful	4
(19) <i>Symmetry</i> —Adaptation of the several parts to each other	10
Perfection	100

II. *General Appearance*—In general appearance the Victorias are strong and growthy and in the typical specimens are of smooth and equable outline.

III. Compared with Berkshires.

- (1) The Victorias are not quite so large nor have they so much of uniformity in size or symmetry, and
- (2) They are white in color, while the Berkshires are black.
- (3) The Victorias bear no little resemblance to the Suffolks, but they are larger.



(326) **Fig. 47. Typical Duroc-Jersey Sow**

LECTURE NO. 10.

THE DUROC-JERSEYS—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The American Duroc-Jerseys are apparently the outcome of the union of two classes of swine, known respectively as the Durocs and Jersey Reds.

(1) The Durocs, of medium size and bone, have been bred for many years in Saratoga county, New York.

(2) The Jersey Reds, large in size and coarse in bone, hair and flesh, have been bred in New Jersey for the past 50 years.

II. The origin and early development of this breed is not apparently well known.

(1) Writers have variously represented them as originating in the Tamworth, the Red Berkshire, and the African or Guinea hog.

(2) It would seem probable that they are possessed largely of the blood of the old race from which the Improved Berkshires have been evolved.

III. The improvers of the breed.

(1) As with nearly all the American breeds of swine, the improvers of the Duroc-Jerseys have been farmers in certain neighborhoods, who sought to improve the pork-producing qualities of the animals which they fed.

(2) The history of the amalgamation of the two original branches of the breed does not appear to have been very clearly written as yet.

IV. Organization.

(1) Two leading associations, viz, the American Duroc-Jersey Swine Breeders' Association and the National Duroc-Jersey Record Association, have been organized in the interests of the breed in the United States.

(2) The former of these was organized in 1889 and the latter in 1890.

V. Distribution in the United States and Canada.

(1) Duroc-Jerseys are now being recorded in more than half the states of the Union and in several of the provinces of Canada.

(2) They are bred most numerously in the states of Indiana, Iowa, Illinois, Ohio, Nebraska and Michigan.

VI. Registration in the United States and Canada.

(1) The two associations named under Note IV have recorded 35,085 animals, of which 10,587 are males and 24,498 are females.

(2) In the Canadian Record, 790 animals have been recorded.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Duroc-Jerseys are now considerably reduced in size, but they vary not a little in this respect in different localities.

(2) Though not quite equal to the Berkshires or the Poland-Chinas in size, they bear no little resemblance to these breeds in form, though they differ so radically from them in color.

II. Adaptability.

(1) They have proved themselves well adapted to sections where good rustling qualities are important, and

(2) In regions where the ability to stand the pressure of heavy corn feeding is of much consequence.

III. Early maturing qualities.

(1) These have been greatly improved during recent years, but

(2) They are not yet quite equal perhaps to those of some of the medium breeds.

IV. Grazing and feeding qualities.

(1) Their grazing qualities are good, as they are an active and hardy breed.

(2) While they do not fatten so quickly as some breeds, they can well endure a forcing ration.

V. Quality of the meat.

(1) The meat has more lean than some of the other breeds of the same class, but

(2) The relative amount of bone and offal may also be something more.

VI. Value in crossing and grading.

(1) They answer well for crossing upon breeds more refined and more delicate of constitution, but

(2) To cross them upon large, vigorous and somewhat coarse pigs would probably be a mistake.

VII. Breeding qualities.

(1) These stand high relatively among the American breeds, and

(2) The young pigs are possessed of a fair degree of hardihood.

VIII. Compared with Berkshires.

(1) The Duroc-Jerseys are a little less in size and are not yet quite so well adapted for bacon production.

(2) In other essential characteristics the two breeds are not far different.

STANDARD POINTS.

I. The following is the revised scale of points adopted by the American Duroc-Jersey Swine Breeders' Association:

	POINTS.
(1) <i>Head and Face</i>	4
(2) <i>Eyes</i>	2
(3) <i>Ears</i>	2
(4) <i>Neck</i>	2
(5) <i>Jowl</i>	2
(6) <i>Shoulders</i>	6
(7) <i>Chest</i>	12
(8) <i>Back and Loin</i>	15
(9) <i>Sides and Ribs</i>	8
(10) <i>Belly and Flank</i>	6
(11) <i>Hams and Rump</i>	10
(12) <i>Legs and Feet</i>	10

	POINTS.
(13) <i>Tail</i>	1
(14) <i>Coat</i>	2
(15) <i>Color</i>	2
(16) <i>Size</i>	5
(17) <i>Action and Style</i>	4
(18) <i>Condition</i>	4
(19) <i>Disposition</i>	3
	<hr/>
Perfection	100

II. Detailed description drawn up by the American Duroc-Jersey Swine Breeders' Association:

(1) *Head and Face*—Head small in proportion to size of body; wide between eyes; face nicely dished (about half-way between Poland-China and Berkshire), and tapering well down to nose; surface smooth and even. Objections—Large and coarse; narrow between eyes, face straight, crooked nose, or too much dished.

(2) *Eyes*—Lively, bright and prominent. Objections—Dull, weak or obscure.

(3) *Ears*—Medium; moderately thin; pointing forward and downward, and slightly outward, and also attached to head neatly. Objections—Very large; round or nearly so; too thick; swinging and flabby; not of same size, or different positions, and not under control of animal.

(4) *Neck*—Short; thick and very deep; slightly arching. Objections—Long, shallow and thin.

(5) *Jowl*—Broad; full and neat; carrying fullness back to point of shoulder and on line with breastbone. Objections—Too large, loose and flabby, or too small, thin and wedging.

(6) *Shoulders*—Moderately broad, very deep and full, and not extending above line of back; boars under one year old heavily shielded.

(7) *Chest*—Large; very deep; filling full behind shoulders, and breastbone extending well forward, so as to be readily seen. Objections—Flat, shallow, or not extending well down between the forelegs.

(8) *Back and Loin*—Medium in breadth; straight or slightly arching; carrying even width from shoulder to ham; surface even and smooth. Objections—Narrow, creased behind shoulders, swayed or humped up.

(9) *Sides and Ribs*—Sides very deep; medium length; level between shoulders and hams, and carrying out full down to line of belly; ribs long; strong, and sprung in proportion

to width of shoulders and hams. Objections—Flabby, creased and not carrying proper width from top to bottom.

(10) *Belly and Flank*—Straight and full, and carrying well out to line of sides. Flank well down to lower line of sides. Objections—Narrow; tucked up; sagging or flabby; flank tucked up or drawn in.

(11) *Hams and Rump*—Broad, full and well down to hock; buttocks full and come nearly down to and fill full between hocks; rump should have a rounding slope from loin to root of tail. Objections—Hams narrow; short, thin, not projecting well down to hock; cut up too high in crotch; rump narrow, flat or peaked at root of tail, or too steep.

(12) *Legs and Feet*—Medium in size and length; strong; nicely tapering; wide apart and well set under the body; pasterns short and strong; feet short, firm and tough. Objections—Legs extremely long or short; shins, coarse; crooked; as large below knee and hock as above; set close together; hocks turned in or out of straight line; hoofs, long, slim and weak; toes, spreading or crooked.

(13) *Tail*—Medium large at base and nicely tapering, and rather bushy at point. Objections—Extremely heavy; too long and ropy.

(14) *Coat*—Moderately thick and fine; straight; smooth and covering the body well. Objections—Many bristles; hair coarse, harsh and rough, wavy or curly; swirls, or not evenly laid over the body.

(15) *Color*—Cherry red without other admixtures. Objections—Very dark red, or shady brown; very light or pale red; black spots over the body; black flecks on belly and legs not desirable, but admissible.

(16) *Size*—Large for age and condition; boars two years old and over should weigh 600 pounds; sows, same age and condition, 500 pounds; boars eighteen months, 475 pounds; sows, 400 pounds; boars twelve months, 350 pounds; sows, 300 pounds; boars and sows six months of age, 150 pounds. These figures are for animals in fair show condition. Objections—Rough and coarse, and lacking in feeding qualities.

(17) *Action and Style*—Action, vigorous and animated; style, free and easy. Objections—Dull and stupid; awkward and wabbling; testicles not easily seen, not of same size or carriage; too large or only one showing.

(18) *Condition*—Healthy; skin free from any scurf, scales, sores and mange, and flesh evenly laid on over entire body and free from lumps. Objections—Unhealthy; scurfy; scales, sores or mange; too fat for breeding purposes; hair harsh and standing up; poor feeders, etc.

(19) *Disposition*—Very quiet and gentle; easily handled or driven. Objections—Wild, vicious or stubborn.

III. *General Appearance*—The Duroc-Jerseys, with their rather light, straight heads, drooping ears and smooth and neat frames, bear no little resemblance to Poland-Chinas in form, but they are somewhat larger and stronger in limb.

IV. Compared with Berkshires.

(1) The Duroc-Jerseys are not so large nor quite as long in body, though equally wide for the size.

(2) They are lighter in the head than the Berkshires, have less dish and less development of jowl, longer and more pendent ears and not so much relative length of side, and

(3) They are sandy in color, while the Berkshires are black.

LECTURE NO. 11.

THE CHESHIRE—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The Cheshire breed of swine originated in Jefferson county, N. Y., and since the middle of the century.

(1) The origin of the name Cheshire is not fully known, since

(2) The old English breed of this name is virtually extinct, having been crossed upon by smaller and earlier maturing breeds.

II. Formation of the breed.

(1) Cheshires are the outcome of crosses between the Large Improved Yorkshire and the Suffolk breeds upon the native white hogs of the neighborhood.

(2) The extent to which the blood of the imported breeds was used is not fully known, but it is very probable that no out-crosses have been made since 1873.

III. The improvers of Cheshires.

(1) A. P. Clark of Belleville and S. P. Huffstater of Watertown, N. Y., were the most distinguished of the early originators of the breed, but

(2) To E. W. Davis belongs the honor of rescuing Cheshires from the temporary obscurity into which they fell, consequent upon the financial crisis of 1873.

IV. When improvement was effected.

(1) Cheshires were first exhibited at the New York state fair in 1859 by A. P. Clark, and during the year immediately following they grew rapidly in favor.

(2) In 1870 they won the Pork Packers' prize of \$500 for the best pen of pigs exhibited at the St. Louis (Mo.) fair.

(3) E. W. Davis began his work of improvement in 1873.

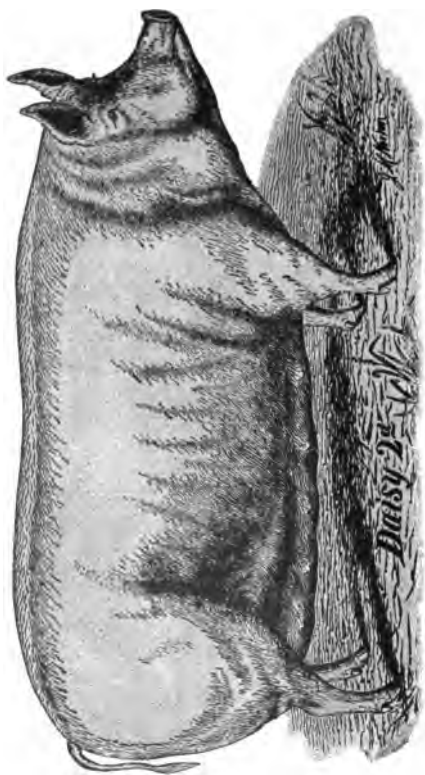


Fig. 48. Typical Cheshire Sow

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V. Organization.

(1) The Cheshire Swine Breeders' Association was organized in 1884.

(2) The first volume of the Cheshire Herd Book was published in 1889.

VI. Distribution in the United States.

(1) Cheshires are now kept in nineteen states and also in Canada.

(2) They are bred most numerously in the eastern states, but some of the central states are also possessed of a considerable number.

(3) New York state has probably more breeders than all the other states combined.

VII. Registration in the United States.

(1) There have been recorded 2,767 animals, male and female.

(2) Only a few specimens of the breed have been introduced into Canada.

LEADING CHARACTERISTICS.

I. Relative size.

(1) Though by no means a small animal, the Cheshires are probably the smallest of the middle breeds.

(2) It is claimed that they can be made to dress from 500 to 600 pounds when fully grown.

II. Adaptability.

(1) Cheshires are well adapted to what may be termed average conditions.

(2) They seem to possess at least medium qualities in almost every respect.

III. Early maturing qualities.

(1) They possess these in a marked degree.

(2) Numerous instances are on record wherein they have been made to dress 400 pounds when nine months old.

IV. Grazing and feeding qualities.

(1) Their grazing qualities are at least fair, and

(2) Their marked docility and early maturing qualities make them very satisfactory feeders.

V. Quality of the meat.

(1) The flesh of Cheshires is fine in the grain, and hence solid and firm in texture, and

(2) It is also well intermixed, more especially when fed upon such pork-making products as are most freely produced in New England.

(3) As bacon producers they rank high among the medium breeds.

VI. Value in crossing and grading.

(1) Cheshires are best adapted to crossing upon roughly made and slow maturing pigs.

(2) When so crossed they refine the bone and promote early maturity and easy keeping qualities.

VII. Breeding qualities.

(1) These are only medium, but

(2) As with all breeds, much depends upon the way in which they are kept.

VIII. Compared with Berkshires.

(1) The Cheshires are considerably less in weight and are even more refined in frame and bone.

(2) The Berkshires would seem to have a wider field in which they may be successfully used for crossing.

(3) In other respects they considerably resemble one another.

STANDARD POINTS.

I. The following is the scale of points adopted by the Cheshire Swine Breeders' Association:

	POINTS.
(1) <i>Head</i> —Short to medium in length, short in proportion to length of body8
(2) <i>Face</i> —Somewhat dished and wide between the eyes	8
(3) <i>Jowl</i> —Medium in fullness	3
(4) <i>Ears</i> —Small, fine, erect, and in old animals slightly pointing forward	5
(5) <i>Neck</i> —Short and broad	3
(6) <i>Shoulders</i> —Broad, full and deep	6
(7) <i>Girth Around Heart</i>	8
(8) <i>Back</i> —Long, broad and straight nearly to root of tail	10

POINTS.

(9) <i>Side</i> —Deep and full, nearly straight on bottom line	7
(10) <i>Flank</i> —Well back and low down, making flank girth nearly equal to heart girth	3
(11) <i>Hams</i> —Broad and nearly straight with back and running well down toward hock	10
(12) <i>Legs</i> —Small and slim, set well apart, supporting body well on toes	10
(13) <i>Tail</i> —Small, slim and tapering	3
(14) <i>Hair</i> —Fine, medium in thickness and quantity	3
(15) <i>Color</i> —White, any colored hair to disqualify	2
(16) <i>Skin</i> —Fine and pliable, small blue spots objectionable but allowable	3
(17) <i>Symmetry</i> —Animal well proportioned, handsome and stylish	8
Perfection	100

II. *General Appearance*—In general appearance the Cheshire is neat, refined, smooth, well proportioned and active in movement.

III. Compared with Berkshires.

(1) The Cheshires are not so large, not so heavy of build, nor quite so strong of limb.

(2) They are something lighter in the head, even more erect in the ears and not so deep in body, and

(3) There are the differences in color.

IV. Compared with Poland-Chinas.

(1) Cheshires are less massive relatively, have more length of side, less of upward arch from the poll to the withers and from the tailhead to the loin, and are less rounded at the buttock.

(2) They have much smaller and more erect ears, and finer limbs and bone.

(3) They are more active and stylish in appearance, and are white in color.



Fig. 49. Typical Suffolk Sow

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THE SMALL BREEDS

LECTURE NO. 12.

THE IMPROVED SUFFOLKS—THEIR ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

I. No little obscurity hangs over the origin of the Improved Suffolk, but it is probable that it is the outcome of crossing one or more of the small white breeds upon the old Suffolk breed.

(1) The old Suffolk swine were white with rather long legs, long heads, flat sides and much coarse hair.

(2) The Improved Suffolks as bred in England were also white, but had short heads and long cylindrical bodies, short legs and fine, long and thin hair.

II. The Improved Suffolks, though possessed of no little popularity at one time in England, are not now numerous in that country.

(1) Since the middle of the century they have been gradually allowed to drop out of the prize lists of the leading English shows.

(2) They have probably been largely absorbed by other small white breeds, notably the Small Yorkshire.

III. The only breed now generally recognized as Suffolk in England would seem to be a small black breed, kept most numerous in the county of Suffolk.

(1) They resemble the small white breeds in form and essential qualities, but

(2) It is claimed they are somewhat larger, more rugged and more prolific.

IV. Importations into the United States.

(1) Some obscurity would seem to rest upon the date of the first importations made into America.

(2) As early as 1855, Suffolks were imported into the state of Illinois by the Hon. John Wentworth.

(3) Occasional importations have been made since that time, but it cannot be said that Suffolks are coming so generally into favor as some of the large breeds are.

V. Organization.

(1) There is no organization in England to protect the interests of the breed.

(2) The American Suffolk Association keeps records for the breed.

VI. Distribution in the United States.

(1) Suffolks are now found in several states of the Union, but not in very large numbers.

(2) They are probably best established in the states of Michigan, Illinois, New York, Ohio and Indiana.

VII. Registration in the United States and Canada.

(1) Something more than 1,100 animals have been recorded in the United States, of which about 30 per cent are males.

(2) The registrations in Canada number 737.

LEADING CHARACTERISTICS.

I. Relative size.

(1) The Suffolks are considerably larger and longer than the Small Yorkshires, and they weigh well, but

(2) At maturity they do not reach so great a size as any of the medium breeds.

II. Adaptability.

(1) Suffolks are best adapted to intensive conditions where grazing lands are scarce and dear and where soiling food is much used in addition to pasture.

(2) They also have special adaptation for producing a nice quality of pork that can be quickly grown and made ready for market at any age.

III. Early maturing qualities.

- (1) These are of the first order, since
- (2) When properly fed they keep in good condition and round out so quickly that they may be profitably marketed under the age of six months.

IV. Grazing and feeding qualities.

(1) It cannot be said that the grazing qualities of Suffolks are of the very best, owing to the shortness of their limbs and to tendencies to obesity.

(2) They are very easy keepers and give a quick and high return for the food given up to the limit of the most profitable marketable age, which is under rather than over six months.

V. Quality of the meat.

(1) The meat is tender, fine grained, juicy and excellent when marketed while the pigs are young, but later the proportion of the fat becomes excessive.

(2) It is probably most in favor with the customers of retailers who want what may be termed light weight pork.

VI. Value in crossing and grading.

(1) Suffolks have not been greatly used for this purpose in the United States or Canada.

(2) When so used it should be to impart refinement and earlier maturity to animals lacking in these qualities.

VII. Breeding qualities.

(1) They usually produce smaller litters than the large breeds and the offspring is not always equal to that of the former in vigor, but

(2) Breeding qualities are probably influenced more by environment than by inheritance.

STANDARD POINTS.

I. The following is the scale of points adopted by the American Suffolk Swine Breeders' Association:

(1) *Head*—Small, very short; jowl fine; ears short, small, thin, upright, soft and silky.

(2) *Neck*—Very short and thick, the head appearing almost as if set on front of the shoulders, no arching crest.

(3) *Chest*—Wide and deep, elbows standing out.

(4) *Brisket*—Wide but not deep.

(5) *Shoulders*—Thick, rather upright, rounding outward from top to elbow.

(6) *Crops*—Wide and full.

(7) *Sides and Flanks*—Long ribs and well arched out from back, good length between shoulders and hams; flank well filled out and coming well down at ham.

(8) *Back*—Broad, level and straight from crest to tail, no falling off or down at tail.

(9) *Hams*—Wide and full, well rounded out, twist very wide and full all the way down.

(10) *Legs*—Small and very short, standing wide apart; in sows just keeping the belly from the ground; bone fine; feet small; hoofs rather spreading.

(11) *Tail*—Small, long and tapering.

(12) *Skin*—Thin, of a pinkish shade, free from color.

(13) *Hair*—Fine and silky, not too thick; color of hair, pale yellowish white; perfectly free from any spots or other color.

(14) *Size*—Small to medium.

II. *General Appearance*—The Suffolk is a short-legged pig with a body moderately long, somewhat cylindrical, very wide and deep and a head very much dished.

LECTURE NO. 13.

IMPROVED ESSEX SWINE—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

I. The Improved Essex swine are the outcome of crossing the Neapolitan upon the old Essex breed.

(1) The old Essex breed, native to the county of Essex, were black and white in color, large and coarse in build, long in the leg and snout, flat-sided and roach-backed, unquiet in disposition and were great consumers of food.

(2) The Neapolitans were first imported from Italy by Lord Western in 1830.

(3) For a number of years the progeny were designated Essex-Neapolitan.

II. Effects of the Neapolitan cross.

(1) It changed the color to black, reduced the bone and offal generally, shortened the leg and snout, improved the general form and increased the aptitude to fatten, but

(2) The Essex-Neapolitans became less vigorous and less prolific because of the closeness of the breeding, and they were reduced in size.

III. How further improvement was effected.

(1) Impaired qualities were restored by crossing the Essex-Neapolitans upon selected sows essentially of Essex blood.

(2) This work began about 1840 and was chiefly effected by Fisher Hobbs, one of Lord Western's tenants.

IV. Distribution of the Improved Essex.

(1) The Improved Essex have not been distributed so widely as many other breeds.

(2) In Britain they are most numerous found in the counties of Essex and Suffolk.

(3) They have also been exported, but not in large numbers, to several Anglo-Saxon speaking countries.



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Fig. 50. Typical Essex Sow

V. Introduction into the United States.

- (1) The information on this question is meager, but
- (2) There are good reasons for believing that they were introduced into New England about, or previous to, the middle of the century.

VI. Organization.

- (1) It is only during recent years that the Improved Essex swine have attracted much attention in this country.
- (2) The American Essex Association was organized in 1887.

VII. Distribution in the United States and Canada.

- (1) The Improved Essex are now being recorded from thirteen states and from the province of Ontario.
- (2) They are most numerous in the states of Michigan, Nebraska, Texas, Illinois, Ohio, Indiana and Georgia, and probably in the order named.

VIII. Registration in the United States.

- (1) There have been recorded in all 4,189 animals.
- (2) Of these, 1,619 are boars and 2,570 are sows.

LEADING CHARACTERISTICS.

I. Relative size.

- (1) In size the Essex are something larger than the Small Yorkshires, and probably something smaller than the Suffolks.
- (2) At maturity they may be made to weigh 600 pounds.

II. Adaptability.

- (1) They are best adapted to small holdings contiguous to markets with a special retail trade.
- (2) They meet well the purposes of the market gardener.

III. Early maturing qualities.

- (1) These are markedly pronounced.
- (2) In this respect the Essex are fully equal to the other small breeds.

IV. Grazing and feeding qualities.

- (1) Because of their contented disposition they may be grazed or fed soiling food, as may be desired.

(2) They are easy feeders, and when well fed may be marketed at almost any age.

V. Quality of the meat:

(1) As with the small Yorkshires, the meat is usually tender, juicy and well flavored, hence

(2) The meat is specially adapted to family use and to a select trade.

VI. Value in crossing and grading.

(1) As with the other small breeds the Essex are best adapted to crossing on larger and coarser types.

(2) Such crossing refines the system, hastens maturity and promotes easy feeding qualities.

VII. Breeding qualities.

(1) Though not so prolific as the long-bodied breeds, the Essex cannot be called shy breeders.

(2) These qualities are largely influenced by environment.

VIII. Compared with Suffolks.

(1) In their essential characteristics, the Essex breed does not differ greatly from the Suffolk.

(2) To so great an extent is this true that distinctions are not easily drawn between them.

STANDARD POINTS.

I. The following is the scale of points adopted by the American Essex Association:

	POINTS.
(1) <i>Color</i> —Black	2
(2) <i>Head</i> —Small, broad and face dished	3
(3) <i>Ears</i> —Fine, erect, slightly drooping with age	2
(4) <i>Jowl</i> —Full and neat	1
(5) <i>Neck</i> —Short, full and slightly arched	3
(6) <i>Shoulders</i> —Broad and deep	7
(7) <i>Girth Around Heart</i>	6
(8) <i>Back</i> —Straight, broad and level	12
(9) <i>Sides</i> —Deep and full	6
(10) <i>Ribs</i> —Well sprung	7
(11) <i>Loin</i> —Broad and strong	12
(12) <i>Flank</i> —Well let down	2
(13) <i>Ham</i> —Broad, full and deep	12
(14) <i>Tail</i> —Medium, fine and curled	2

	POINTS.
(15) <i>Legs</i> —Fine, straight and tapering	3
(16) <i>Feet</i> —Small	3
(17) <i>Hair</i> —Fine and silky, free from bristles	3
(18) <i>Action</i> —Easy and graceful	4
(19) <i>Symmetry</i> —Adaptation of the several parts to each other	10
Perfection	100

II. Below is given the description of scale of points adopted by the American Essex Association :

- (1) *Head and Face*—
 - (a) Head, short, coming well forward at poll.
 - (b) Face, short and well dished, broad between the eyes, tapering from eyes to point of nose, surface smooth and regular.
- (2) *Ears*—Fine, erect, slightly drooping with age, thin, soft and smooth.
- (3) *Jowl*—Full and neat, carrying fullness back to shoulders, solid, not flabby.
- (4) *Neck*—Short, full and slightly arched.
- (5) *Shoulders*—Broad, deep and full, not extending above the line of back and being as wide on top as back, carrying size down to line of belly.
- (6) *Chest*—Large, deep, so as not to cramp vital organs, full in girth around the heart.
- (7) *Back*—Straight, broad and level, carrying same width from shoulders to hams.
- (8) *Sides*—Deep and full, smooth and firm, carrying out full to line of belly.
- (9) *Ribs*—Well sprung in proportion to hams and shoulders.
- (10) *Loin*—Broad and strong.
- (11) *Flank*—Well let down to lower line of sides.
- (12) *Hams*—Broad, full and deep.
- (13) *Tail*—Medium, fine and curled.
- (14) *Legs*—Fine, straight and tapering.
- (15) *Feet*—Small, with hoofs erect.
- (16) *Hair*—Fine and silky, free from bristles, smooth, covering the body well, not clipped.
- (17) *Color*—Black.
- (18) *Action*—Easy, graceful and attractive.
- (19) *Disposition*—Quiet, gentle and easily handled.
- (20) *Symmetry*—The proper adjustment of the several parts to each other.

III. The following additional points are submitted:

- (1) Neck, deep.
- (2) Brisket, wide and on a level with the underline.
- (3) Ribs, deep.
- (4) Legs, short.

IV. *General Appearance*—The Essex are small, neat and smooth in form, nicely turned at the shoulders and hips, symmetrical and handsome.

V. Compared with the Suffolks.

(1) The Essex are a little smaller and shorter, and rather more active on foot.

(2) The dish in the head is somewhat less pronounced and the legs are a trifle longer, and

(3) The Essex are all black, while the Suffolks are all white.

LECTURE NO. 14.

SMALL YORKSHIRE SWINE—ORIGIN AND HISTORY, CHARACTERISTICS AND STANDARD POINTS.

ORIGIN AND HISTORY.

I. The history of Small Yorkshire swine cannot be traced with certainty beyond the year 1818.

(1) Chas. Mason and Robt. Colling, both of Durham, kept pigs of this breed at that date.

(2) They were then designated Chinese, from which it is inferred that they were possessed of much of the blood of that breed.

II. Early in the century there were several breeds or strains of small white pigs in England, as the Small Yorkshires, the Cumberland, the Solway and the White Leicester.

(1) The blood of these was apparently commingled in the evolution of the breed as it exists at present.

(2) The Solway and Cumberland strains gave added size and vigor.

III. Other small white varieties.

(1) Several other varieties or sub-varieties with only a local reputation have appeared from time to time, as the Middlesex, Coleshill and Windsor, but

(2) These are now generally looked upon as variations of the Small White Yorkshire.

IV. Distribution of small Yorkshires.

(1) They have been bred in several counties of England and have also been exported, though in limited numbers, to various foreign countries.



Fig. 51. Typical Small Yorkshire Sow

(350)

(2) They have been a favorite breed with certain noblemen in England, owing probably to the great symmetry of form which characterizes them.

V. Introduction into the United States.

- (1) Information on this point is not plentiful, but
(2) Within the last two decades considerable attention has been given to breeding them in the eastern states.

VI. Organization.

- (1) Two associations are recording Small Yorkshires in the United States.
(2) One of these, the American Small Yorkshire Club, has headquarters in New York city.
(3) The other, the American Yorkshire Club, has headquarters in St. Paul, Minn., and it records also Large Improved Yorkshires.

VII. Distribution in the United States.

- (1) Small Yorkshires are now bred in more than half the states of the Union.
(2) They are probably most numerous in the states of New York, Massachusetts, Pennsylvania, Ohio and Minnesota.

VIII. Registration in the United States.

- (1) In the American Yorkshire record there have been recorded 762 Small Yorkshires, of which 346 are boars and 416 sows.
(2) The other association, the American Small Yorkshire Club, has probably recorded a larger number.

LEADING CHARACTERISTICS.

I. Relative size.

- (1) The Small Yorkshires are probably the least in size of all the pedigreed breeds of swine in America, but
(2) Owing to their compactness of form, they weigh well in proportion to their apparent size.

II. Adaptability.

- (1) The Small Yorkshires have highest adaptation for intensive conditions where rapid growth and early maturity are important considerations, and where there are markets which call for pork of light weight.
(2) They will quickly convert into money value the waste vegetable refuse of the truck farmer and the market gardener.

III. Early maturing qualities.

- (1) No breed matures more quickly or at an earlier age.
- (2) They can be marketed at almost any age desired, but more profitably at an early age, because of the slower relative development that follows the first months of growth.

IV. Grazing and feeding qualities.

- (1) Because of their short limbs and compact forms they are not so well able to rustle on pastures as some breeds.
- (2) No breed feeds more easily or grows more rapidly until the usual marketing time, which should be under rather than over six months.
- (3) No breed gives a higher percentage of dressed meat.

V. Quality of the meat.

- (1) The meat is fine in texture and delicate in flavor when properly fed, and the proportion of bone is small.
- (2) It is well adapted to what may be termed high-class retail trade, more or less local in character.

VI. Value in crossing and grading.

- (1) The cross of the Small Yorkshires may be used with decided advantage in refining coarse types and in improving their easy feeding qualities.
- (2) Their value in this respect has been well demonstrated in the use made of Small Yorkshire blood in the evolution of the Improved Large Yorkshires.

VII. Breeding qualities.

- (1) They do not produce litters so large as some of the large breeds nor are they, as a rule, such abundant milkers, but
- (2) With judicious management they will breed regularly and with a fair measure of prolificacy.

VIII. Compared with the Suffolks.

- (1) The resemblance between the two breeds is close in all leading essentials, but
- (2) The Small Yorkshires are not so large and are even more refined.

STANDARD POINTS.

I. The following is the standard scale of points adopted by the American Small Yorkshire Club:

	POINTS.
(1) <i>Head</i> —	
Smaller the better	2
Nose, shorter the better	5
Dish, greater the better	3
Width between ears, greater the better	3
Ears, small, thin, erect, more so the better; may be pricked forward, not lopped	2
	—15
(2) <i>Trunk</i> —	
Top line, straighter the better, from shoulder to tail	5
Belly line, the more level the better	5
Girth in excess of length, more the better, if not more than 10 per cent	5
Depth, greater the better	5
Width, greater and evenner the better, from shoulder to ham	5
Loin, broader the better	3
Flank, deeper and fuller the better	2
	—30
(3) <i>Hams</i> —	
Length, longer the better	10
Breadth, broader the better	10
Thickness, greater the better	5
	—25
(4) <i>Shoulders</i> —	
Length, longer the better	2
Breadth, broader the better	3
Thickness	5
	—10
(5) <i>Legs</i> —	
Shorter the better	3
Straighter the better	2
	—5
(6) <i>Skin</i> —	
Smooth, flexible, fine, more so the better	5
	—5
(Must not be too thin, nor ridgy and coarse, nor show discolored spots from old sores, not pale and ashy, but healthy in color and free from eruption.)	
(7) <i>Hair</i> —	
Evenner, finer and thicker the better	5
	—5
(8) <i>General Appearance</i> —	
Symmetry and evidence of vigorous health	5
	—5
Perfection	100

II. *General Appearance*—The Small Yorkshire is very compact in form and fine and short in head and limb, and usually carries with it much smoothness, fullness and symmetry of form.

III. Compared with Suffolks.

(1) Small Yorkshires are smaller, shorter in the barrel and have even smaller and finer limbs.

(2) In other essentials of form the two breeds are very similar.

APPENDIX A

DEFINITION OF TERMS MORE COMMONLY APPLIED TO ANIMAL FORM.

1. *Head*—The whole of that part in front of the forward neck line.
2. *Face*—The whole front of the head from the muzzle to the poll.
3. *Poll*—The top of the head from side to side.
4. *Forehead*—The whole of that part of the face between the eyes and the poll.
5. *Eyes*—The organs of vision.
6. *Dish*—Depression in the face between the eyes and also between the poll and the muzzle.
7. *Nose*—The part of the face between the eyes and the muzzle.
8. *Muzzle*—The lowest part of the head always devoid of hair.
9. *Nostrils*—The outer openings of the air passages concerned in respiration.
10. *Cheek*—The whole outer surface of the side of the head below the eye and forward to the mouth.
11. *Horns*—Bony protuberances coming out from the sides of the poll and variously curved.
12. *Ears*—The organs of hearing.
13. *Neck*—That part between the forward and rear neck lines, or between the head and body.
14. *Forward Neck Line*—That line which marks the junction of the head and neck.
15. *Rear Neck Line*—That line which marks the junction of the neck and body.
16. *Throat*—That part where the upward curve meets the lower neck line.
17. *Body*—All that part of the animal backward from the rear neck line except the legs and tail.
18. *Back*—The whole of the top of the body from base of the neck to the tailhead.
19. *Withers*—The part of the back above the shoulders and between the top of the rear neck line and the chine.
20. *Chine*—The part of the back between the withers and the loin.
21. *Loin*—The part of the back over the short ribs and between the chine and pelvic arch.

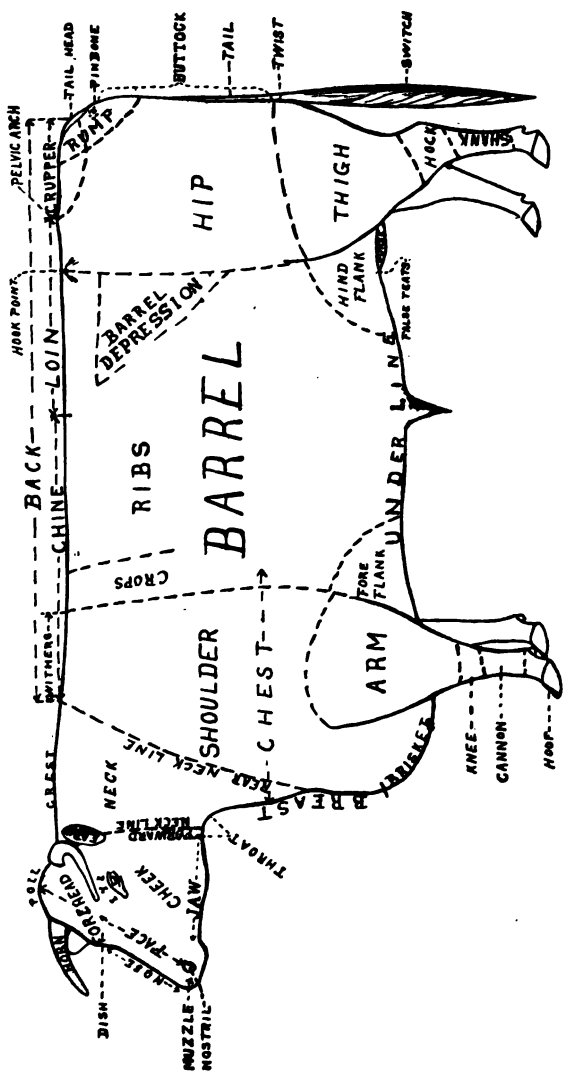


Fig. 52. Illustrating Points of Animal Form

22. *Hooks*—The rounded prominences at the outer edges of the rear part of the loin.

23. *Pelvic Arch*—The portion of the back, usually more or less elevated, which is placed between the loin and the crupper and above the junction of the pelvis with the spinal column.

24. *Crupper*—The part of the back above the hips and between the pelvic arch and tailhead.

25. *Tailhead*—Where the tail joins the body.

26. *Shoulders*—The parts of the forequarters behind the rear neck line, in front of the crops, below the withers and above the arm.

27. *Chest*—The part which encloses the cavity between the shoulders and behind the breast.

28. *Breast*—The part of the body in front of the chest.

29. *Brisket*—The part below the breast and extending backward between the forelegs.

30. *Arm*—That part of the leg below the shoulder and above the knee.

31. *Knee*—The forward part of the middle joint in the front leg.

32. *Cannon*—The part of the front leg between the knee and the ankle joint.

33. *Hoof*—The horny substance which encloses the foot.

34. *Barrel*—The part of the body which lies backward from the shoulder and arm, forward from the hip and thigh, and between the topline of the back and the underline.

35. *Underline*—The lower line of the body, extending backward from the forward point of the brisket.

36. *Crop*—The part of the barrel, usually a little depressed, that lies immediately behind the shoulder and extends from the back downwards toward the center of the body.

37. *Foreflank*—That part of the barrel usually more or less depressed, that lies immediately behind the arm.

38. *Ribs*—The bony rods arching outward and downward from the spinal column and thus tending to encircle the barrel.

39. *Hindflank*—That part of the barrel, usually more or less depressed, which extends for a short distance forward from the thigh and upward from the underline.

40. *Hip*—That part of the hindquarter that lies backward from the barrel, above the thigh, forward from the buttock and below the crupper and pelvic arch.

41. *Thigh*—The part of the hindquarter that lies below the hip and above the hock.

42. *Hock*—The prominent rear part of the middle joint of the hind leg.

43. *Buttocks*—The rear part of the body below the tailhead.

44. *Pin-bones*—The rounded prominences at the rear part of the pelvis and on either side of the rectum.

45. *Rumps*—The part which includes the pinbones and the tailhead.

46. *Twist*—That part which extends for a short distance downward and outward from the junction of the inner thighs.

47. *Escutcheon*—That part of the cow between the perineum and the udder on which the hair is fine and lies outward from the center rather than downward.

48. *Udder*—The glandular vessel between and in front of the thighs in which the milk is secreted.

49. *Teats*—The fleshy covered ducts through which the milk is drawn from the udder.

50. *Milk Veins*—Those ducts, usually more or less tortuous and branched, which extend forward from the udder along and underneath the barrel.

51. *Milk Wells*—The openings through which the milk veins enter the abdominal wall.

DEFINITION OF TERMS LESS FREQUENTLY APPLIED TO ANIMAL FORM.

1. *Frontal Bone*—Another name for forehead, but more restricted in the space indicated.

2. *Orbit*—The cavity occupied by the eye.

3. *Rim of the Orbit*—The bony prominence encircling the orbit.

4. *Jaw*—The lower part of the side of the head which extends backward from the muzzle to the throat.

5. *Topline*—The line that extends along the upper portion of the body and more or less parallel with the underline.

6. *Topline of the Neck*—The upper line of the same which extends from the poll to the withers.

7. *Crest*—Elevation in the topline of the neck.

8. *Ewe-neck*—Depression in the topline of the neck.

9. *Dewlap*—Loose, pendulous skin usually found forward from the breast and underneath the neck and throat.

10. *Collar*—Another name for rear neck line.

11. *Neck Vein*—Another name for collar.

12. *Forequarter or Frontquarter*—The whole of the body forward from the center of the barrel to the forward neck line, but sometimes that part of it only which lies between the forward girth and breast.

13. *Hindquarter*—The whole of the body backward from the center of the barrel, but sometimes that part of it only backward from the rear girth.

14. *Coupling*—Another name for barrel.

15. *Forward Girth, or Heart Girth*—The measurement around the body immediately behind the shoulder.

16. *Rear Girth, or Flank Girth*—The measurement around the body immediately in front of the hip.

17. *Umbilicus*—That point in the central and lower part of the abdomen where the umbilical cord of the foetus is attached.

18. *Barrel Depression*—The triangular depression that lies below the loin, behind the long ribs and in front of the hip.

19. *Shoulder Blade*—The triangular bone of the shoulder, more or less flat on the surface, which extends downward and forward and covers the forward portion of the side of the chest.

20. *Top Shoulder Point*—The upper point of the shoulder blade.

21. *Front Shoulder Point*—The rounded point located at the front and lower part of the shoulder blade, where the latter joins the arm bone.

22. *Elbow Point*—That rounded prominence at the upper and back portion of the forearm.

23. *Foreleg*—The whole of the forward limb below the top of the arm.

24. *Hindleg*—The whole of the rear limb below the upper extremity of the thigh bone.

25. *Stifle*—That joint immediately back of the hind flank.

26. *Thurl*—The hip joint located toward the rear and upper portion of the hip.

27. *Sacrum*—Nearly synonymous with the pelvic arch.

28. *Incurving Thigh*—Forward curve of the rear part of the thigh.

29. *Fore Udder*—The two forward quarters of the udder.

30. *Hind Udder*—The two rearward quarters of the udder.

31. *False Teats*—Miniature teats in the male placed more or less distant from one another and immediately in front of the purse.

DEFINITION OF TERMS RELATING TO ANIMAL FORM
WHICH ARE LIABLE TO BE MISUNDERSTOOD
BECAUSE OF THEIR INDEFINITENESS.

1. *A Clean Cut Head*—A head that is light rather than heavy, fine rather than coarse, nicely curved out below the eyes and in a less degree above them, and free from superfluous flesh in every part.

2. *A Head Well Set On*—One that is carried with that degree of erection that is pleasing to the eye and that joins nicely at the junction with the neck.

3. *A Neck Well Set On*—One that is of proper elevation for the sex and breed, and that joins nicely at the head and blends nicely at the shoulders.

4. *Parallelogrammic Form*—That form in which the body from the rear neck line backward resembles a parallelogram.

5. *Cylindrical Form*—That form in which the body from the rear neck line backward resembles a cylinder.

6. *Bare Shoulders*—Shoulder blades with but little covering of flesh underneath the skin.

7. *Bare Loins*—Loins with but little covering of flesh over them.

8. *Drooping Rumps*—A downward inclination of the topline from the pelvic arch to the tailhead.

9. *Pumpkin Buttocks*—Buttocks that are protuberant, that is to say, rounded out backward toward the center.

10. *A Glandular Udder*—An udder so numerously supplied with glands as to be capable of much distension when full and that is pliable and elastic when empty.

11. *A Fleshy Udder*—An udder possessed of so much fleshy tissue as to be incapable of large distension when full and that is unduly large and unyielding when empty.

12. *A Good Skin*—A skin of proper color and suitable thickness for the breed, that is easily lifted up from the underlying tissues or moved laterally over them, and that is covered with a good coat of hair.

13. *A Good Coat*—Hair sufficiently abundant to protect the skin, and soft and mossy to the touch.

14. *Secretions of the Skin*—Those oily substances which come to the outer surface of the skin in cattle, more particularly within the ears and at the escutcheon.

15. *A Good Fleece*—One that is of even and suitable length, texture, strength, density, crimp and elasticity for the breed, that is suitably supplied with yolk, and that covers the frame sufficiently.

16. *Yolk*—Oily secretions deposited on the skin of sheep and distributed over the wool fibers of the fleece.

17. *Bristles*—Strong, stiff and more or less erect hairs sometimes found on the topline of the neck and withers of swine.

18. *Good Handling Qualities*—These include an easily yielding and elastic condition of the flesh of the body under gentle pressure of the fingers, a ready vibration of the skin over the ribs under gentle lateral movement of the hand, a ready filling of the hand when the skin over the ribs is grasped by the same, and a nice, soft, mossy condition of the coat.

19. *A Good Handling Back*—A back in which the skin and flesh convey a nice sensation of softness and springiness when gently pressed with the tips of the fingers.

20. *General Outline*—General outline relates to the more essential features of form considered together.

21. *Symmetry*—Symmetry relates to the harmony as to form that exists between the different members of the body.

22. *General Appearance*—That impression as to general outline and symmetry conveyed to the mind when an animal is viewed at rest and in motion.

23. *Carriage*—Carriage relates to the movement of the different members of the body and to the position of the same when in motion.

24. *A Graceful Carriage*—The carriage is graceful when the members of the body are kept in correct position when in motion and when the movement of the same is easy and natural.

25. *A Bold Carriage*—The carriage is bold when the step is firm and active, when the head is carried well erect, and when the eye is likewise possessed of a bold and determined look.

NOTE—In the definitions thus submitted the aim has been to interpret them in the light of common usage rather than to harmonize and locate the various parts that relate to external form in exact consonance with the names given to those parts by the anatomist.

APPENDIX B

CATTLE

FACTS REGARDING THE ANIMALS ILLUSTRATED.

Frontispiece—This picture represents a herd of pure bred Shorthorns owned by Samuel B. Gorwill, near London, Ontario, Can.

Dual-Purpose Cow—No. 2965, Mayflower A. 12. Bred by George F. Taber, Paterson, N. J., owned by V. T. Hills, Delaware, O. Winner of first prize at the Ohio state dairy test in 1891. Milk record for one year, 11,508 pounds, which at 4.59 per cent, the average of her official test in butter fat, would produce 584 pounds of butter. Milk yield from August, 1890, to December 30, 1893, three years and five months, 37,967 1-4 pounds, which averaged in butter fat 4.35 per cent. Mayflower A. 12 is a pedgreed Red Poll.

Shorthorn Bull—Nominee 131262. Bred by E. Gaunt & Sons, St. Helens, Ontario, Can. Owned by H. F. Brown, Minneapolis, Minn. Winner of grand sweepstakes prize over all breeds at the Trans-Mississippi exposition held at Omaha in 1898.

Shorthorn Cow—Victoria 55th (Vol. 24, p. 18,814). Bred by J. W. Aldrich, Tiskilwa, Ill., in 1882, subsequently owned by William Cummings & Son, later by C. M. Sanger & Son and still later by George Harding & Son, Waukesha, Wis. Winner of first prize at several leading state fairs.

Hereford Bull—Corrector 48976. Bred and owned by T. F. B. Sotham, Chillicothe, Mo. His record as a prize winner in the leading showrings of the United States and as a sire of prize-winning animals is probably unequaled by that of any other bull now living. Corrector is the sire of the two famous show and stock bulls, Sir Bredwell 63685 and Thickset 68785. At Kansas City, in 1899, Sir Bredwell sold for \$5000, the highest price ever reached by a Hereford sold at auction.

Hereford Cow—Benita 48542. Bred and owned by T. F. B. Sotham, Chillicothe, Mo. Winner of first prize at several of the leading state fairs from 1894 to 1898.

Aberdeen-Angus Bull—Jim Jams 13896 (7630). Bred by O. C. Wallis of Bradley Hall, England, selected by the late William Watson and imported by W. T. Harvey, then of Tur-

lington, Neb. Owned subsequently by J. Evans, Jr., & Son, Emerson, Ia.

Aberdeen-Angus Cow—Vine 2d of Skene 3947 (3229). Bred by George Hamilton, Skene House, Aberdeenshire, Scotland. Imported and owned by Hon. M. H. Cochrane, Hillhurst, P. Q. Vine 2d was a prize winner at the Highland Agricultural Society's show held at Sterling, Scotland, in 1881, and the same year won first prize at the provincial fair held at Montreal, P. Q.

Galloway Bull—Crusader (2858). Bred by Thomas Biggar & Sons, Chapelton, Dalbeattie, Scotland. Winner of champion cup as best Galloway bull at the Highland and Agricultural Society's centenary show in 1894.

Galloway Cow—Corlina 10734. Bred by S. P. Clark, Dover, Ill., and owned by T. J. Davis & Son, Triumph, Ill. Winner of third prize as best cow of any age or breed at the Trans-Mississippi exposition, held at Omaha, Neb., 1898.

Group of Sussex Cattle—The bull Royal Surrey (720) was bred by Joseph Godman, Godalming, Surrey, England, and imported by Overton Lea, Nashville, Tenn. The cows, Maywood (3532) and Maywood 1st (3790) were bred by Mr. Lea. All were noted prize winners at leading state fairs at sundry times between 1885 and 1889.

West Highland Heifer—Lady Flora. Owned by the Rt. Hon., the Earl of Southesk, Scotland.—From "Live Stock of Great Britain."

Holstein Bull—Chief of Maple Hill 4th, No. 17224, H. F. H. B. Bred by M. E. Moore, Cameron, Mo. Owned by W. B. Barney & Co., Hampton, Ia. Winner of many first prizes at the leading state fairs in the west from 1889 to 1898. In 1898 he was placed first in his class at the Trans-Mississippi exposition, held at Omaha, Neb.

Holstein Cow—Jepma 2d, No. 733, H. H. B. Bred by M. D. Koldijk, Wirdum, Friesland. Imported by Thomas B. Wales, 1879. Winner of first prize in 1882 and 1883 at several of the leading state fairs in the west. Jepma 2d is of the milk and beef form.

Dutch Belted Cow—Huldah No. 141. Bred by the late William Arnout of Orange county, New York. Owned subsequently by H. B. Richards, Easton, Pa. Huldah made for several years a milk record of about 12,000 pounds a year, and was also a first prize winner at several state fairs.

Ayrshire Bull—Sir Thomas Bruce 4161. Bred by Thomas Guy, Oshawa, Ontario, Can. Subsequently owned by Coldren & Lee, Iowa City, and later by F. M. Watson, Roseville, Ill. Winner of first prize at the Minnesota state fair, 1888.

Ayrshire Cow—Duchess of Smithfield 4256. Bred by Henry E. Smith, Enfield, R. I. Owned by H. R. C. Watson, Brandon, Vt. Winner in 1885 of the Ayrshire Breeders' Association's prize for the largest amount of milk given in seven

consecutive days. She gave 463 3-4 pounds of milk which produced 19 lbs. 6 oz. of butter.

Guernsey Bull—Lord Stranford 2187, A. G. C. C. Selected on the island of Guernsey for the herd of Hon. Levi P. Morton, by whom he was imported in 1889. Subsequently owned by Dr. G. Howard Davison, Millbrook, N. Y., and later by James B. Duke, Somerville, N. J. Winner of sweepstakes at the World's Fair, Chicago, in 1893.

Guernsey Cow—Rutila's Daughter 6670, A. G. C. C. Bred by Francis Shaw, Wayland, Mass., in 1891. Owned by H. McK. Twombly, Madison, N. J. Winner of sweepstakes at the New York state fair, 1897; seven days' butter record, 21 lbs. 4 oz.

Jersey Bull—Czar Coomassie 41036, A. J. C. C. Bred by G. L. & A. C. Davis, Port Jefferson, N. Y. Owned by John E. Robbins, Lonetree herd, Greensburg, Ind. Winner of first prize at the New York state fair in 1897, also of first prize and sweepstakes at the Ohio, Indiana, Illinois and Missouri state fairs the same year.

Jersey Cow—Teasel 75358, A. J. C. C. Bred and owned by H. C. Taylor, the proprietor of the Brown Bessie herd, Orfordville, Wis. Teasel is the only living daughter of Brown Bessie 74997, champion butter cow at the World's Fair, 1893. In June, 1896, Teasel gave 294 lbs. 4 oz. of milk in a seven days' test, which made 20 lbs. 4 oz. butter.

French Canadian Cow—La Countesse St. Norbert (918). Bred by Arsene Denis, St. Norbert, P. Q. Owned by Chas. E. Colburn, Portlandville, N. Y. Winner of first prize at several of the New York state fairs.

Kerry Cow—Flora. Owned by Martin J. Sutton, Reading, Eng. Winner of first prize at the London dairy show in 1885 and again in 1887.—From "Farm Live Stock of Great Britain."

Polled Durham Cow—Lorena 73, A. P. D. H. B. Bred by W. W. Crane, Tippecanoe City, O. Subsequently owned by J. H. Miller, Peru, Ind. Winner of first prize at the state fairs of Ohio, Indiana and Illinois. Lorena was of the beef type and was a cow of great scale. Her weight at maturity was over 2,000 pounds.

Brown Swiss Cow—Brienz No. 168. Bred in Switzerland. Owned by A. Bourquin, Nokomis, Ill. At the Fat Stock show held in Chicago, November, 1891, Brienz in a three days' test, gave 245 pounds of milk which contained 9.32 pounds of butter fat.

Red Poll Cow—Willow Belle 471 (3218), bred by G. F. Taber, Patterson, N. Y. Owned by S. A. Converse, Cresco, Ia.—From Vol. I, American Red Poll Herd Book.

Devon Cow—Wisconsin Belle No. 2831. Bred and owned by George Baker & Sons, Hustisford, Wis.—From Vol II, Devon Herd Record.

SHEEP

American Merino Ewe—A pure Atwood Spanish Merino. —From Report on Sheep Industry in the United States, 1892, p. 614.

Delaine Merino Ewe—No. 408. Ear tab, No. 210. Owned by James McClelland, Canonsburg, Pa. Winner of the silver cup offered at the West Virginia and the western Pennsylvania state fairs in 1887 for the best Delaine Merino ewe of any age.

Rambouillet Ewe—Gilbert No. 31. Record No. 8456. Bred by Victor Gilbert, Wideville, near Crespines, France. Imported by George Harding & Son, Waukesha, Wis., in 1899. Subsequently owned by C. H. Ballinger, Lexington, Neb. Winner of first and champion prizes at the Minnesota state fair, 1899, and also at several other state fairs.

Southdown Ewe—Jackson ewe "22B" 10248. Bred and owned by John Jackson & Sons, Abingdon, Ont. Winner of first prize in her class and sweepstakes as the best sheep in the show at the Ontario Fat Stock exhibition held at Brantford, 1898.

Tunis Ram—Gladstone No. 7. Bred and owned by Charles Rountree, Crawfordsville, Ind. Winner of first prize and sweepstakes once at the Wisconsin state fair, twice at the Missouri state fair and three times at the Indiana state fair.

Dorset Ewe—McCulmut's 90, 715 C. D. C. Bred by H. M. McCulmut, Bishopswood, Ross, Eng. Imported by George Harding & Son, Waukesha, Wis. Owned by R. Stuyvesant, Tranquillity Farms, Allamuchy, N. J. Winner of grand sweepstakes for best ewe of any breed at the Trans-Mississippi exposition, Omaha, 1898.

Shropshire Ewe—Nancy 5719. Bred and owned by John Campbell, Woodville, Ontario, Can. Winner when a shearling of first prize at the Toronto Industrial exhibition in 1886, also of other first prizes at important fairs.

Cheviot Ewe—Wild Rose 193. Bred and owned by Howard H. Keim, Ladoga, Ind.

Suffolk Down Ewe—Bred by the Marquis of Bristol, Tuddenham Hall Farm, Mildenhall, Suffolk, Eng. Imported by the agricultural college, Guelph, Ontario, Can., in 1891.

Hampshire Down Ewe—Ear tag No. R. M. 4208. Winner in first prize pen at the Royal Agricultural Society's show in England in 1899. Imported by George Harding & Son, Waukesha, Wis. Winner of first prize at the Minnesota and other state fairs in 1899.

Oxford Down Ewe—Daisy. Bred and owned by Smith Evans, Gourock, Ontario, Can. Daisy was one of a trio of

Oxford Downs that won the silver medal at the Ontario provincial show held at London in 1899.

Leicester Ram—Royal Chester 742. Bred by Lord Polworth, Mertoun, Scot. Imported and owned by John Kelly, Shakespeare, Ontario, Can. Winner of sweepstakes as ram of any age at the World's Fair at Chicago, Ill., in 1893, and also of many other noted prizes.

Lincoln Ewe—Lady. Bred by Mr. Dudding, England. Imported and owned by Gibson & Walker, Denfield, Ontario, Can. A prize winner at the World's Fair, Chicago, 1893.—*Breeders' Gazette* of Nov. 15, 1893.

Cotswold Ram—Garne's 34, 16087. Bred by R. & W. Garne, Aldsworth, Gloucestershire, Eng. Imported by George Harding & Son, Waukesha, Wis., in 1898. Winner of sweepstakes as best Cotswold ram at six leading state fairs that same year.

SWINE

Chester White Sow—Hodgson's Choice, No. 9804. Bred and owned by L. C. Hodgson, Luverne, Minn. Winner of first prize at the Minnesota state fair in 1899. Also in herd which won first prize at the same fair.

Large Improved Yorkshire Sow—Donna 3d of Clover Crest, No. 572. Bred by A. G. Wilcox, Hugo, Minn. Owned by the Minnesota university experiment farm.

Tamworth Sow—Katie Bell 345. Bred by John Bell, Amber, Ontario, Can. Owned by the Iowa agricultural experiment station. Winner of sweepstakes prize at the Trans-Mississippi exposition at Omaha, Neb., 1898.

Berkshire Sow—Cherry Blossom IX 26274. Bred and owned by A. J. Lovejoy & Son, Roscoe, Ill. Winner of first prize and sweepstakes at the Illinois, Minnesota and Kansas state fairs and also of other important prizes.

Poland-China Sow—Rose Glen 30666, S. P. C. Record. Bred by J. A. Shellenberger, Bedison, Mo. Owned subsequently by W. T. Garrett, Maryville, Mo.

Victoria Sow—Beauty. Owned by George Stark, St. Louis, Mo.

Duroc-Jersey Sow—Our Choice No. 15774. Bred and owned by C. H. Searle, Edgar, Neb. Winner of first prize at the Minnesota state fair, 1899. She was also in the herd that won three first prizes at the Trans-Mississippi exposition held at Omaha, Neb., 1898.

Cheshire Sow—Daisy 2d No. 143. Bred and owned by E. W. Davis, Oneida, N. Y. Winner of first prize at the New York state fair and also at other important fairs.

Suffolk Sow—White Rose No. 688. Bred and owned by A. C. Green & Son, Winchester, Ind. Winner of first prize and sweepstakes at the Indiana state fair in 1898-99, and of first prize at several other state fairs during both years.

Essex Sow—Royal Best No. 2508. Bred and owned by A. C. Green & Son, Winchester, Ind. Winner of first prize and sweepstakes at the Indiana state fair in 1899 and of first prize at several other state fairs.

Small Yorkshire Sow—Chenango's Choice 2041. Bred, and owned by F. B. Stewart, Espyville, Pa. Winner of first prize and sweepstakes at the New York and Pennsylvania state fairs in 1896, also first in class and was in the winning herd at the fair held at Madison Square Garden, New York city, the same year.

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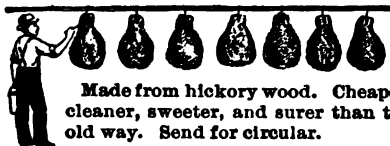
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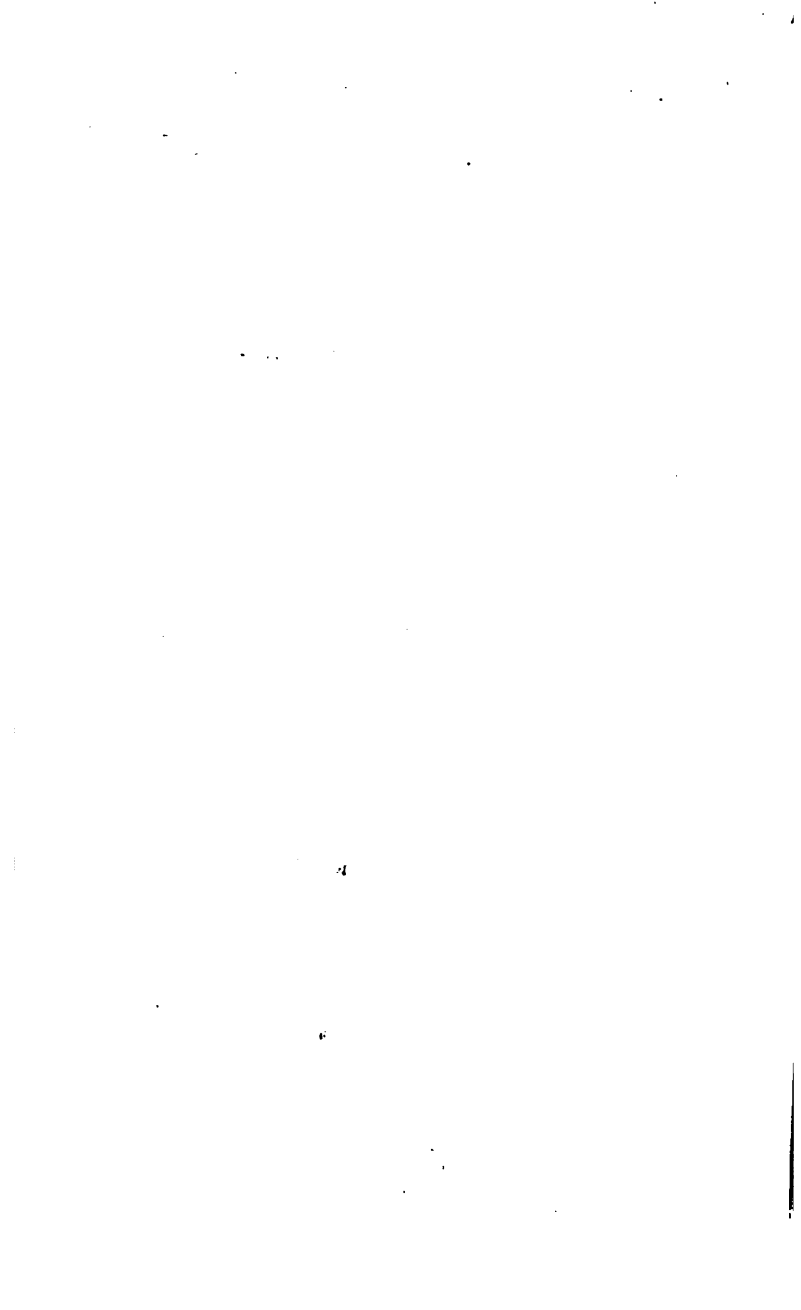
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